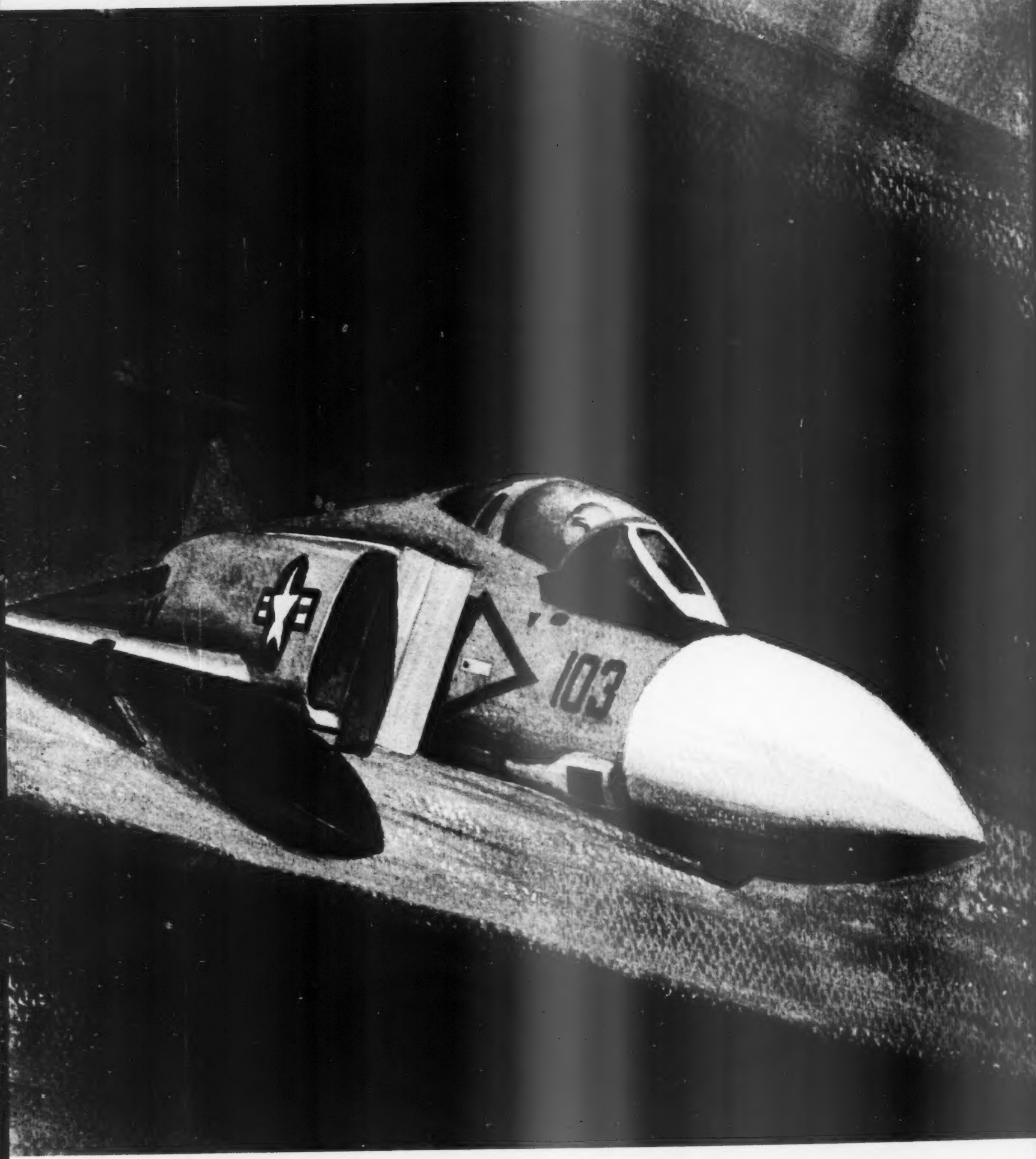
A Naval Safety Center Publication

approach

DECEMBER 1973 THE NAVAL AVIATION SAFETY REVIEW


103

'I can't make it!'

Overhead Homefield at 15,000 feet, a *Phantom* was detached from a three-plane formation for landing. Unknown to the flight leader, the F-4J crew was unaware of their true position and, after being detached, flew *away* from the field. They became completely lost and, approximately 45 minutes later, were forced to abandon their aircraft at a point 30 miles away, just prior to complete fuel exhaustion.

A FLIGHT of four F-4J *Phantoms* were scheduled for an ordnance delivery flight while on a 2-week, air wing deployment to NAS Desert. All aircraft in the flight were configured with external centerline fuel tanks, but the drops on No. 2 and No. 3 aircraft contained no fuel. Further, F-4 No. 2 had no IFF or TACAN installed in the aircraft. There were, however, no known discrepancies on the aircraft's UHF/ADF, nav computer, or radar. The pilot was aware of the missing CNI equipment, but the RIO was not because he had not read part C of the yellow sheet.

Following delivery of ordnance, No. 3 detached from the flight and returned to the field for landing. Shortly thereafter, the three remaining aircraft proceeded overhead NAS Desert at 15,000 feet to rendezvous with an A-7E tanker for air refueling practice. Radio contact could not be established with the tanker, and the flight leader assumed that it hadn't gotten airborne. He then requested the fuel states of the aircraft in his flight Number 2 responded with "3200 lbs," approximately 3700 lbs less than the two other birds (which had launched with full centerline drops).

While turning left through a southeasterly heading at 15,000 feet MSL, and overhead a point about ½-mile south of NAS Desert, No. 2 (on the leader's starboard wing) was directed to detach and land. As No. 2 detached to starboard, the two remaining aircraft continued their turn and departed the area to burn down prior to landing.

Upon detaching from the flight on a southerly heading, the pilot of No. 2 F-4 rolled into approximately a 45-degree port bank to check the area below for familiar landmarks. Seeing none, he checked starboard with similar results. The RIO, who had not been monitoring their geographical location, felt that the aircraft was still 30 to 40 miles north-northwest of NAS Desert and directed his pilot to steer south.

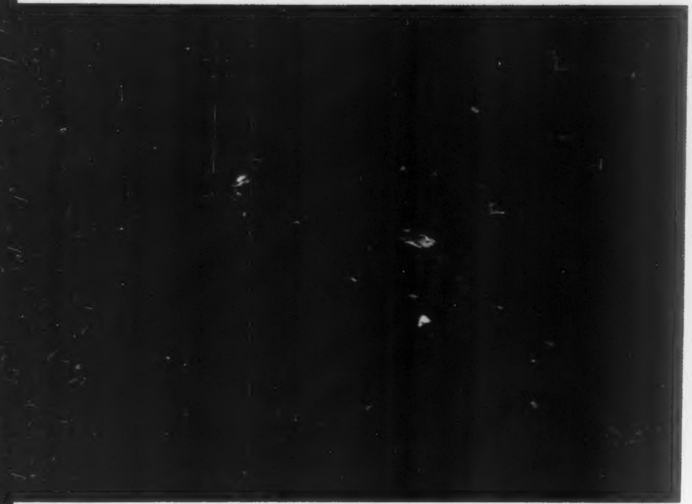
Maintaining a southerly heading, the aircrew did not look back to the north. The RIO acquired several targets on radar, and both crewmembers felt that they knew where they were at this time. After flying a southerly course for "about 10 miles," the RIO attempted to locate their position on a geographic chart. In the process, he misidentified a lake. This "convinced" him he was 45 miles northwest of NAS Desert, when in fact he was *35 miles south*!

About this time, the F-4 was sighted by a flight of four A-7s from a sister squadron who attempted an engagement. The *Corsair II* flight had prebriefed for just such an engagement with another F-4 on a separate flight and was patrolling the area. Upon seeing the A-7s roll in, the *Phantom* continued south for a short time and then turned easy port (15-degree bank) to visually reacquire the A-7s, but was unable to do so. The aircrew then decided to climb in an attempt, again, to geographically locate themselves. They climbed to FL260 on a southeasterly heading.

Upon leveling at FL260 with no familiar terrain in sight, the aircrew finally became convinced that they were lost. Their estimated fuel state was 2200 lbs.

They relayed their difficulties to NAS Desert tower, requested a UHF/ADF steer, and changed their course to an easterly direction. NAS Desert initially did not understand the transmission, and approximately 6 minutes later, the F-4 pilot declared an emergency on tower frequency, stating that he was "low fuel" and requesting an ADF cut. At some time during this period, the *Phantom* crew decided that their UHF/ADF receiver, whose bearing indicator was spinning, was not working properly and concentrated on giving long counts rather than receiving them.

Within 2 minutes after declaring an emergency, they switched to Guard. A minute later, the tower advised that they had no UHF/DF equipment and



requested long counts so that a nearby FSS could get a cut. The first steer, "Head north 315," was given by the tower. Reconstruction of the sequence of events indicate that at that time the F-4 was estimated to be at 1200 lbs fuel, bearing 120 degrees, 90 miles from NAS Desert. Two minutes later, the lost bird was directed to contact Western Center, but could not raise them.

About this time, another aircraft reported that the F-4 was bearing 070 degrees from a well-known lake. The RIO didn't believe these bearing calls, and the pilot, who was unable to locate the local area chart that he regularly carried in his nav bag, could not recall the location of the lake in question. (The RIO retained the lone chart in the rear cockpit as the aircrew continued to discuss their position.) It was concurrently established that there were no tankers airborne at the time.

The F-4J, which had commenced a port orbit, steadied up first on a northeasterly heading, then gradually came about to a heading of 280 to 290 degrees. Then, with 800 lbs of fuel remaining, the pilot commenced an idle descent.

The crew observed smoke from an industrial plant, later identified as being located at a town 49 miles southeast of NAS Desert. As they overflew the plant at about 12,000 feet, they were visually sighted by the pilot of an aircraft from a sister squadron. The lost plane's fuel state at this time was reported to be 500 lbs. The pilot of the other F-4 urged him to continue toward NAS Desert, stating, "You only have about 30 miles to go."

It was, in fact, about 45 miles to the field. The pilot of the lost plane replied, "I can't make it," and entered a shallow left turn over a small, dirt airfield, His intention was to find a place to eject or ditch the aircraft. At one point, he indicated that he was going to land the aircraft on the dirt field. He was advised by the pilot of an A-7 who had arrived on the scene not to try it.

The other F-4 again urged the lost plane to "try to make it" to Homefield, but the pilot reported having only 200 lbs of fuel and stated that he was going to eject in the valley they were over rather than risk an ejection in the mountains between himself and NAS Desert. With a reported 100 lbs of fuel remaining, and upon signal from the pilot, the RIO command-ejected both himself and the pilot at 12,000 feet. The ejections were successful although the pilot was injured. Both were subsequently picked up by helo and returned to NAS Desert.

Investigation revealed that both crewmembers were known to be weak in aircraft knowledge and performance. Thus, each should have been paired with a more proficient crewmember.

Although the flight leader was also considered a factor in that he failed to establish that his wingman was completely aware of his geographical position, the crew of the lost F-4 must bear the brunt of responsibility. The pilot made numerous errors in judgment. He failed to keep track of his position and failed to request information as to his position in a timely manner, leaving the navigation instead solely to his RIO until it was too late. In addition, he failed to take advantage of the assistance offered. The RIO, for his part, simply failed to perform his basic function of navigating the aircraft.

Ironically, one endorser calculated that because of unlimited visibility, the runway was probably visible from the cockpit throughout most, if not all, of the flight.

'Round and 'Round

AN F-4J RP (replacement pilot) was on his seventh ACM training flight. The setup was to demonstrate the use of a barrel roll underneath from a medium speed condition against a guns-tracking opponent. The F-4J was at 320 KIAS, 20,000 feet, and the opponent (an A-4) in 1000 feet trail, guns tracking.

The maneuver underneath was completed successfully, but without forcing significant bogey overshoot. The RP then misjudged his airspeed and attempted to continue with a barrel roll over the top. This is tactically sound if sufficient airspeed is available. Unfortunately this was not the case. In the RP's own words:

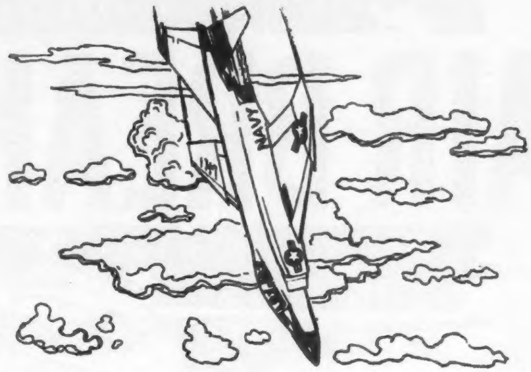
"I continued the pull towards a high G barrel roll over the top, thinking that I had 350 knots with full AB now selected (later confirmed by the RIO to be 200 KIAS). The nose was coming up . . . I still had about half rudder in. As I passed about level to 10 degrees noseup and about 20 degrees left bank, I felt the aircraft depart to the right and then roll over to the left inverted.

"I believe that I had instinctively put in left aileron before and did again at this point. I then knew that I had departed and could feel a yawing moment to the left. I moved the stick full forward and came out of burner to about mid-range throttle. The nose rolled rapidly through the horizon with moderate motion in the cockpit.

"I could not determine spin direction from the dark green water below and immediately went to the turn needle (pegged left) and AOA (pegged at 30 units) while deploying the drag chute and informing the RIO that we were in a spin and had the chute coming out. (The A-4 pilot observed the drag chute stream from its compartment, but did not see it blossom.) Then I held spin recovery controls (full forward and full left stick, with neutral rudders) with idle power.

"The RIO was calling, 'Forward stick and check the turn needle.' We passed 10,000 feet with everything going for us, the RIO still calling for the turn needle and not much unloading. Passing 9000 feet, the aircraft unloaded. I informed the RIO, noted the AOA at 5-10 units, and commenced a gradual pullup. Passing 6000 feet with 350 KIAS, 19 units AOA, and the nose passing 45 degrees nosedown, I added full power and full AB, continuing the recovery. Minimum altitude was 3500 feet.

"The main cause of the spin was inadvertent use of ailerons with too high an angle-of-attack and starting



over the top with 200 KIAS instead of 350 KIAS. Spin recovery procedures have been continually briefed by my instructors, and they work."

The instructor RIO sensed the aircraft unload as 10,000 feet (minimum out-of-control altitude) passed, and knowing a full recovery was imminent, did not call for ejection. It is estimated that the spin developed at 15,000 feet and progressed through three turns.

The F-4 was in a clean configuration. External stores consisted of two LAU-17s and one dummy sidewinder. A rig check had been performed at the beginning of the mission, and the aircraft exhibited normal stability.

The primary cause of this incident was that the RP misjudged his airspeed and attempted a maneuver which exceeded aircraft capabilities. The reporting officer noted that this is to be occasionally expected from a pilot of his experience level (58 F-4 hours) and added:

"Most departures from controlled flight do not result in spins, but in this case, the mild aircraft motions coupled with the natural pilot tendency to counter uncommanded rolls with aileron caused the pilot to apply pro-spin controls during a high angle-of-attack departure condition.

"The hazards of departure from controlled flight are well-recognized by the F-4 community. Aircraft flight characteristics and departure/spin recovery techniques are covered in detail during preflight lectures. Additionally, recovery procedures are a mandatory brief item for each mission, and they had been carefully briefed prior to this mission, The spin recovery, executed from an altitude allowing no margin for error, speaks well for the professional performance of a well-drilled pilot/RIO team." ◄

Cool Head. A CH-46 was on the glidepath of an actual, day GCA when the HAC asked his copilot to turn on the instrument lights. At the time, they were in the clouds in heavy rain.

Shortly afterwards, a pungent odor filled the aircraft – the unmistakable sharp odor of an electrical fire. No indications of fire or electrical malfunction were observed. Nevertheless, the HAC ordered his copilot to secure all lights, navaids, and radios (except what he needed) and to fire up the APU and place it on standby.

The pilot tried to advise GCA of his problem, but the final controller was talking continuously. So the HAC switched to tower frequency, declared an emergency, and returned to GCA frequency. Before reaching minimums, the copilot reported the runway in sight.

Smoke was then seen coming from the overhead circuit breaker panel. The HAC landed and shut down after clearing the runway.

During a recent standdown, this type emergency had been thoroughly discussed. The HAC was ready!

Aw %†$&*! A driver was returning to the flight line after refueling his TA-75 tractor. He was hurrying to help postflight and tie down some CH-46s.

He drove past one helicopter's port side, heading aft, and turned left to pass behind the helicopter. He meant to stop parallel to and just outboard of the starboard stub wing.

The troop tried to stop his turn toward the helicopter, but lost control of the vehicle. It struck the helo dead center (outboard panel of the right stub wing). The tractor's radiator, engine, hood, and steering wheel were damaged.

Why the driver didn't hit the brakes is hard to understand. Needless to say, he wasn't licensed, and he wasn't following procedures for operating yellow equipment. He was merely taking a shortcut, and perhaps full of "deploymentitis."

Cautions. These two cautions apply when conducting aircraft operations with or near vessels carrying flammable or explosive cargo.

The first problem arose from an incident in which a SAR aircraft dropped two flares close to a tank vessel, apparently for identification purposes. The master was greatly concerned because glowing particles fell too close for comfort and avoidance action had to be taken. The tank vessel was in ballast at the time, following discharge of a crude oil cargo, and contained in her cargo tanks a thermally sensitive gaseous atmosphere which could

have been ignited by the glowing particles.

Pilots should avoid dropping flares in the vicinity of vessels in such a manner that any glowing particles might fall on or near them.

The second caution has to do with helicopter hoisting operations with tank vessels.

> "Exercise extreme caution when hoisting from carriers of flammable/explosive cargo or in the vicinity of a flammable mixture spillage. The hoist rig must be grounded clear of spillage from the carrier's tank venting area to preclude a possible fire or explosion from an electrostatic discharge."

Courtesy *On Scene USCG*

If you don't know what you're doing, QUIT. A hydraulicsman went to a CH-53A to fix some gripes. One of the gripes required motoring an engine with the doghouse open to check for hydraulic leaks at the dual-start valve.

The hydraulicsman contacted a member of the helo crew and told him what he was going to do. The APP was started, and a fireguard posted. The No. 2 generator was selected, and the No. 1 engine was motored. (The engine start switch was in EMERG and wasn't checked.) As N_g passed through 10 percent, the hydraulicsman noticed the rotor blades start to turn. He applied the rotor brake, but damage was instantaneous – the folding doghouse had one broken rib and the remaining ribs bent.

The man had never received proper instruction on how to motor an engine. Proper supervision would have prevented this from happening. To prevent future incidents of this type, the squadron published a TIMI (limiting the task to qualified individuals), and pilots have been alerted to return the engine start switch to NORMAL after shutdown.

Severe Weather. When you're 50 miles west of Spartanburg, SC, where are you? There isn't any large city anywhere around, so you're just 50 miles west of Spartanburg, right? If you're in an aircraft, however, you'd better be at 8000 feet or higher. Below you lie the ridges of the eastern mountains.

Mountainous areas sometimes brew a special breed of weather – severe. A P-3 on an IFR flight from Memphis to Jax found this to be so true.

The pilot had chosen that particular route so as to avoid a severe weather area to the south. His aircraft radar was down, and Center provided no weather information. The *Orion* was cruising at FL230, 235 KIAS, when it flew into severe turbulence, heavy rain, hail, and almost continuous lightning. The aircraft was damaged even though it flew out of the weather within 3 minutes. The nose section looked as if someone had worked it over with an ax.

Pilots shouldn't need to be reminded that mountainous areas frequently breed severe weather.

Snake Dance. Take one 4-engine patrol plane, simulate 2 engines out, fail to brief the maneuver, touch down long on a short runway, and hang onto your hat. The ride that follows is bound to thrill anyone watching from a distance and run up the laundry bill of those in the aircraft.

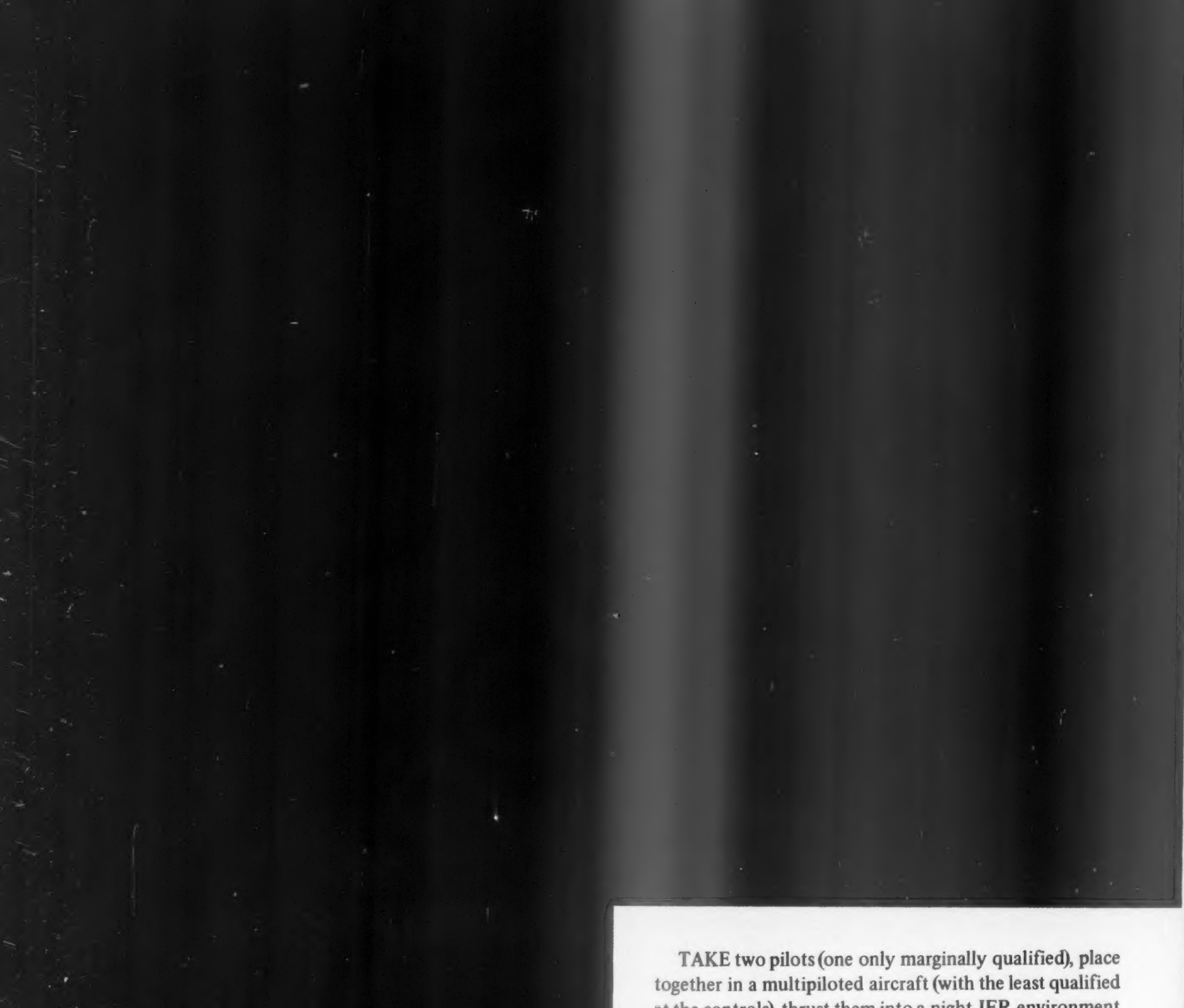
The PUI (pilot under instruction) moved power levers 1 and 2 into ground operating range (3 and 4 were simulated out) and went to full reverse. The *Orion* swerved sharply left. The IP (instructor pilot) hollered, "I have it!" and put power levers 3 and 4 into reverse just as the PUI put positive thrust on 1 and 2. Then, the IP added power on 1 and 2 and reverse on 3 and 4.

The P-3 came within a foot or two of going off the runway to the left, then swerved violently right – crossing the runway at a 60-degree angle.

Slowly, the aircraft assumed a heading 90 degrees to the runway heading, departed the right side of the runway, then turned back toward runway heading, paralleling it for about 500 feet and then angled back onto the concrete – *undamaged!*

Practice 2-engine-out landings can be safely accomplished in the P-3; however, the IP must not hesitate to take over the aircraft at the first hint of trouble. Failure to do so, as is dramatically demonstrated in this incident, can allow a situation to develop which will tax the skill of even the finest IP.

The importance of eternal vigilance on the part of IPs *cannot be overstressed!*



Marginally Qualified

TAKE two pilots (one only marginally qualified), place together in a multipiloted aircraft (with the least qualified at the controls), thrust them into a night IFR environment (including an instrument takeoff under extremely adverse conditions), and you have a situation that spells "trouble."

All factors considered, this should have been sufficient cause for a prudent aviator to pause and consider whether or not the flight was really necessary. Unfortunately, this did not happen, and the events which occurred alarmingly fast after takeoff produced a fatal TS-2A crash.

The two aviators had departed NAS South 2 days earlier on a cross-country training flight to North AFB for an RO2N. One purpose of the flight was to afford an opportunity for the copilot to build up his fixed-wing time. Before his current assignment, he had flown helicopters. His only previous fixed-wing time had been in the T-28 in flight training.

Both pilots had accumulated the majority of their flight time in a day VFR pattern for GCA controller training. The copilot had been experiencing difficulty in

transitioning to the *Stoof.* His only qualification was a safe for solo, day VFR, local conditional qualification. In addition to completing the fam syllabus, he had flown several instrument syllabus flights that were required prior to a NATOPS check. On these instrument flights, he had experienced difficulty in controlling the aircraft, had exhibited poor instrument scan, experienced frequent vertigo, and was very weak on emergency procedures. His performance was marginal, but it was hoped that through time and exposure to multiengine instrument flying, he could eventually complete the NATOPS requirements satisfactorily.

The pilot-in-command, although not a designated plane commander, was current in all respects for command of the aircraft. His performance had been that of an average to above average first tour aviator, having had no problems whatsoever in instruments, ground school, or checkflights. He would have been designated plane commander in the TS-2A within the next 10 hours. Before departing on the cross-country flight, he had been thoroughly briefed by the NATOPS evaluator concerning the copilot's problem areas. *Explicitly, he had been told to be very alert in actual instrument conditions with the copilot at the controls.*

Thus, as the two aviators prepared for the return flight to NAS South, the stage was set. Weather at the time of takeoff was 300 feet overcast, ½-mile visibility in light drizzle and fog with the freezing level at 4000 feet – not exactly a piece of cake even for experienced instrument pilots.

For reasons unknown, the pilot-in-command decided to let the copilot occupy the left seat and make the takeoff. Upon being released for takeoff, departure control instructed them to "climb and maintain 4000 feet." This transmission was acknowledged with, "Roger, four thousand." The aircraft was observed by tower personnel to lift off the runway at the 2000-foot marker and enter the clouds with no apparent difficulty. Despite succeeding calls to the aircraft, no further transmissions were heard, nor could departure control gain radar contact. Shortly thereafter, crash procedures were initiated. Wreckage was discovered the following day 1½ miles from the upwind end of the runway where the aircraft had crashed after a 90-degree right turn.

During investigation, it was found that:

- The aircraft impacted the ground in a near vertical attitude at an estimated speed of 150 – 200 knots.
- All control surface trim tabs were set near 0 degrees. Normal elevator trim setting for takeoff and climb is 7 degrees nosedown.
- All aircraft flight control surfaces and components that might have separated in flight were accounted for.
- Scratch marks on the propellers of both engines indicated the props were turning. Propeller hub assemblies showed that neither prop was feathered. Both engines were at low power settings at the moment of impact.
- The pilot-in-command (acting as copilot) found it difficult to accept criticism and was generally overconfident in his ability as an aviator.

The Mishap Board's analysis of the accident suggests the following as the most probable chain of events.

On climbout, the pilot allowed the right wing to drop, requiring more back pressure on the yoke to maintain a positive rate of climb. Using airspeed and vertical speed indicators as primary instruments in his scan pattern, he continued to trim out back pressures on the yoke (explaining the abnormal noseup trim) at the same time allowing the angle-of-bank to increase (heading change of 150 degrees to the right of the takeoff runway) until the aircraft reached an unusual attitude (angle-of-bank in excess of 60 degrees). Improper diagnosis and recovery from the unusual attitude caused the pilot(s) to apply back pressure on the yoke, initiating a "split-S" maneuver. The pilots, now seeing the rapid increase in airspeed, pulled the throttles back, thus the low power setting on both engines at impact. The aircraft impacted the ground in a near vertical, nosedown attitude during the unsuccessful attempt to recover. Considering the time interval of 2-3 minutes from takeoff until impact, it is estimated the S-2 had reached an altitude of approximately 1000 feet AGL.

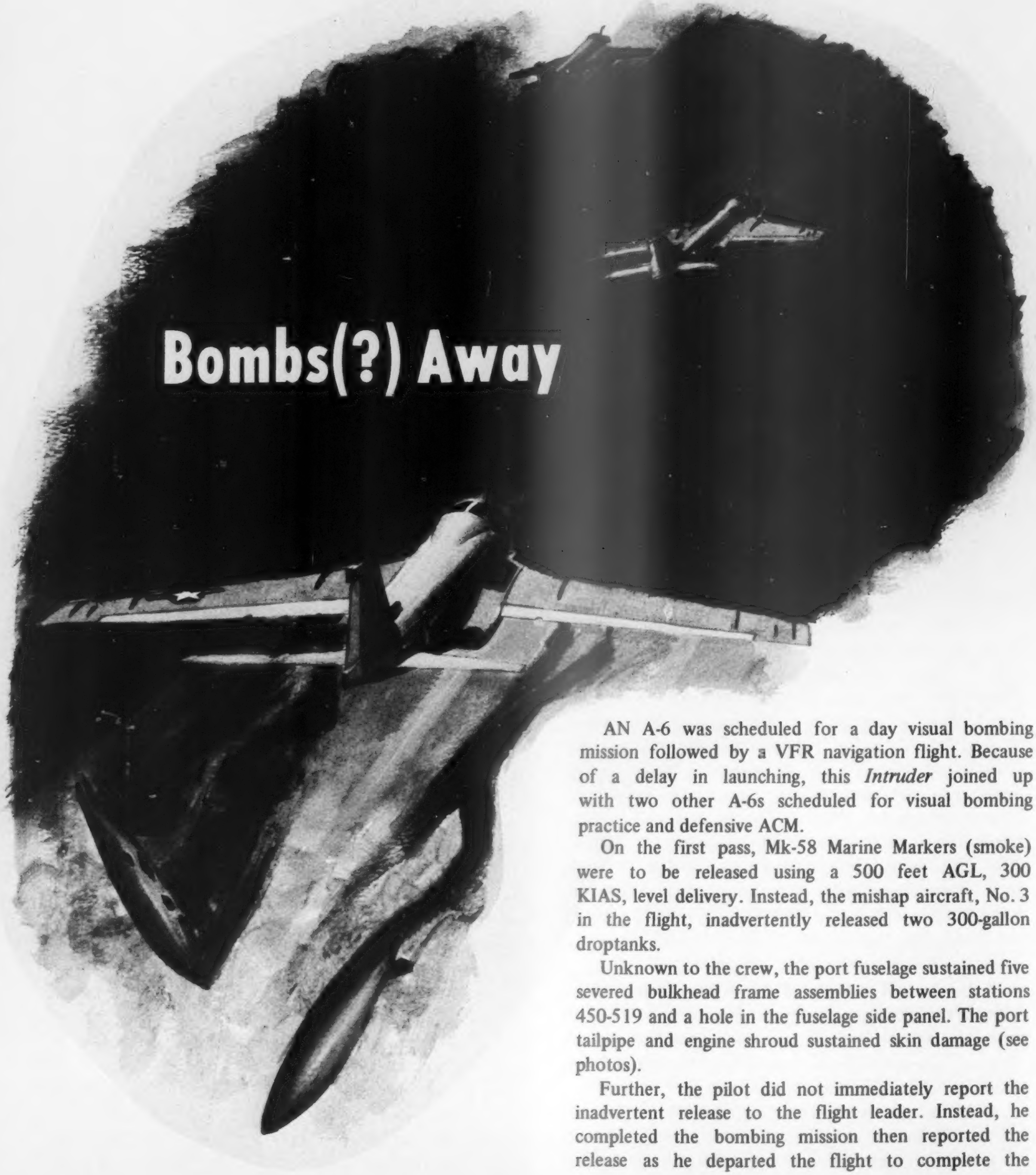
Monday morning quarterbacks can sit back and hypothesize how this accident could have been prevented. The first and most logical question that could have been asked is, "Was it necessary that the return flight be made under the existing weather conditions?" The obvious answer is no. Since the pilot-in-command didn't feel that the weather was bad enough to cancel the flight, the second question is, "Why didn't *he* occupy the left seat and handle the controls?"

One of the endorsers summed it up by stating ". . . the primary cause of this accident appears to be a lack of judgment of a qualified pilot in permitting a known weak pilot to undertake a night takeoff in adverse weather conditions. It is considered most probable that the takeoff and transition to safe instrument flight would have been uneventful if he (the pilot-in-command) had elected to take the controls himself and had relegated (the copilot) to the less demanding copilot duties . . ."

If one principle can be learned from this unfortunate accident, it should be that no pilot will ever be censured in peacetime for delaying or canceling a flight in the interest of safety when confronted with adverse weather.

A previously developed habit pattern and lack of crew coordination contributed to the inadvertent release of two 300-gallon droptanks from an A-6A. Worse yet, the inadvertent release resulted in considerable damage to the aircraft which was not detected until after landing.

Bombs(?) Away



AN A-6 was scheduled for a day visual bombing mission followed by a VFR navigation flight. Because of a delay in launching, this *Intruder* joined up with two other A-6s scheduled for visual bombing practice and defensive ACM.

On the first pass, Mk-58 Marine Markers (smoke) were to be released using a 500 feet AGL, 300 KIAS, level delivery. Instead, the mishap aircraft, No. 3 in the flight, inadvertently released two 300-gallon droptanks.

Unknown to the crew, the port fuselage sustained five severed bulkhead frame assemblies between stations 450-519 and a hole in the fuselage side panel. The port tailpipe and engine shroud sustained skin damage (see photos).

Further, the pilot did not immediately report the inadvertent release to the flight leader. Instead, he completed the bombing mission then reported the release as he departed the flight to complete the

navigation route. No inflight inspection of the aircraft was made, and the damage was not discovered until after return to Homeplate.

Investigation revealed that the crew had carried ordnance in the same configuration on each of six previous flights. Thus, they had become accustomed to an ordnance loading configuration different from that of the mishap flight. The BN set up the ordnance panel as usual for the delivery. Unfortunately, he did not discuss this with the pilot, neither did the pilot visually check the ordnance panel selections.

The mishap board was unable to determine why the droptanks (which contained from 1000 to 1500 lbs of fuel) collided with the aircraft. They concluded, however, that the most probable cause was exceeding the 300-knot airspeed restriction imposed by the A-6 Tactical Manual (NAVAIR 01-85 ADA-1T).

The mishap board made the following recommendations:

- That renewed emphasis be placed on proper briefing, preflight, and airborne procedures for live and practice weapons flights. Particular emphasis must be placed upon the crew's responsibility to be constantly vigilant of the other's intentions and actions and to cross-check the settings on the armament control unit.
- That a visual check of aircraft and ordnance integrity be performed by wingmen or other aircraft immediately following the jettisoning of droptanks and inadvertent jettisoning of any stores or ordnance. The failure of the crew to notify the flight leader and request a visual ordnance/airframe integrity check in this mishap might have resulted in the loss of an aircraft and crew due to the additional stress imposed on damaged structural assemblies during the dive-bombing. If unable to obtain a visual integrity check of the aircraft subsequent to droptank jettison, it is recommended the flight be aborted immediately to preclude operating an aircraft with possible undetected damage.

From Instrument to Contact

THE TRANSITION from instrument to visual flight during an approach in obscured weather is seldom well-defined. And pilots are presented with a number of problems not encountered during approaches that are either hooded or have a defined ceiling with unrestricted visibility below. When the hood is raised or the aircraft breaks out below the ceiling, visual cues required to control the aircraft are usually clear and distinct, and there is instantaneous recognition of the aircraft's position relative to the runway.

Under obscured or partially obscured conditions, the reverse is usually true – visual cues are indistinct and not easily acquired. Discerning aircraft position laterally and vertically relative to the runway is difficult.

It is essential to consider every factor that might have a bearing on the final stages of an approach and landing, e.g., the visibility, type of weather, expected visual cues, and even crew procedures and coordination. Preparation and understanding are keys that will help make the transition smooth and precise.

To transition safely and routinely, the pilot must have a thorough understanding of the weather environment and how it affects the availability and use of visual cues.

Restrictions to Visibility

Rain, smoke, snow, and haze restrict visibility, but the most common restriction is fog, which may be encountered in a number of different forms, each with its own particular hazards. When surface visibility restrictions exist and the sky is totally hidden from the observer, the sky is reported as obscured, and the reported ceiling is the vertical visibility into the obscuring phenomenon. A pilot on an approach in an obscuration will not normally see the approach lights or runway environment as he descends through the altitude of the reported ceiling. Although he should be able to see the ground directly below him, *the transition from instrument to visual flight will normally occur at an altitude considerably lower than that reported for the ceiling.*

In a partial obscuration, vertical visibility is not reported since the ground observer can either see through the obscuration or a portion of the sky is not hidden by the obscuring phenomenon. But when clouds are visible through a partial obscuration, their heights and amounts are reported. The amount (in tenths) of the sky or clouds obscured by a partial obscuration is included in the remarks section of weather reports. Although this may help clarify the reported conditions, it still does not provide an idea of the height at which visual cues will be sighted or give the slant range visibility. In some cases, the partial obscuration can be associated with shallow patchy fogs, so the pilot can expect to lose visual references once into the fog.

Also of concern to the pilot is the visual range at which he will be able to discern visual cues for runway alignment and touchdown. He must be aware that the reported runway visibility or RVR (runway visual range) may not be representative of the range at which he will sight the runway. In fact, the pilot's slant range visibility may be considerably less than the reported RVR.

Another factor that he must consider is the limit to the pilot's forward visual segment due to an aircraft's downward vision angle (angle from the pilot's eyes over the aircraft's nose, measured from the horizontal). This may reduce visibility by as much as several hundred feet.

Once all of these factors and the destination weather are understood, the pilot will possess the knowledge to effect a safe, smooth transition from instrument to visual flight.

Restrictions to visibility which pilots may encounter include, but are not limited to, the following:

Fog. The most serious problem with fog stems from the abundance of cues available at the start of the approach. The pilot may see the approach lighting system and possibly even some of the runway environment during the early stages of an approach. As the fog layer is entered, however, most or all of the cues may be lost. If the pilot is not flying instruments, he may become confused and disoriented.

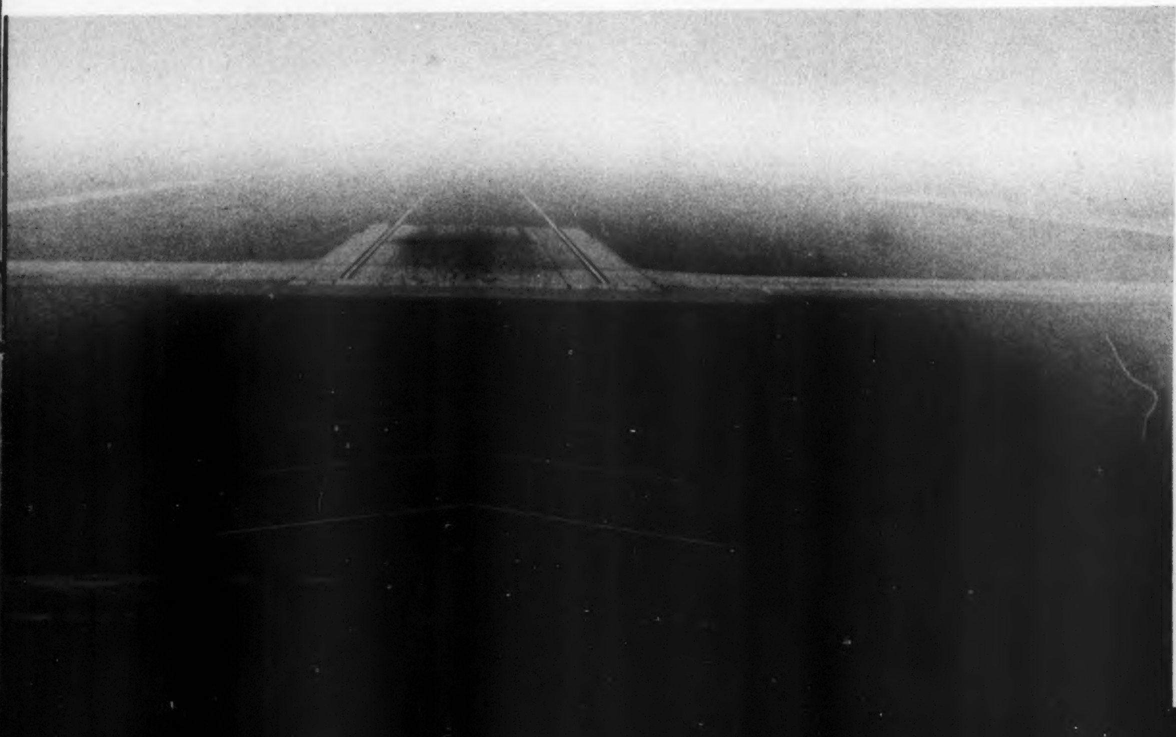
Pilots should not rely entirely on visual cues for guidance. They can be brought into cross-check scan to confirm position, but *instrument scan must be* maintained until visual cues are perceived, can be kept in view *and the runway environment provides* positive references for alignment and touchdown.

At night if the strobe lights are on, they may produce a blinding effect. Landing lights may do the same. The transition involves the integration of visual cues within the cross-check during the latter portion of the approach. Again, it is essential to be thoroughly familiar with the approach lighting system to develop the proper perspective between these cues and the runway environment.

Low stratus. Forms more of a definite ceiling, and better visibilities can be expected once the ceiling is passed. Therefore, the transition from instrument to visual flight is sharper with more pronounced use of visual cues after passing the ceiling. Night approaches may produce the sensation the aircraft is high once the cloud base is passed. The pilot should continue on instruments, cross-checking visual cues to confirm runway alignment. During the flare, the pilot may experience a sensation of descending below the surface of the runway. This will be especially pronounced at facilities with 300-foot wide runways. In either case, the pilot must avoid large attitude changes which might produce overrotation.

Rain. Approach and transition to visual flight can be very hazardous since moderate to heavy rain conditions may seriously affect the acquisition of visual cues and displace the pilot's visual angle. Night approaches in these conditions can be even more critical because the pilot may be blinded by lightning, flashing strobes, or runway end identifier lights.

Transition to visual flight can be severely hampered by the pilot's inability to adequately maintain aircraft control in gusty or turbulent conditions. Further, heavy rain can render the rain removal equipment ineffective and cause obscuration of visual cues at a critical time during the transition. In these conditions, the pilot must have an alternate course of action and be prepared to act (go around) without hesitation. Continued



Snow. Blowing snow is accompanied by many of the same hazards as rain. Of special interest will be a lack of visual cues to effect runway identification for the visual portion of the approach. Even though the approach and runway lights will provide some identification, runway markings and contrast between the runway and its surroundings will be lost in the whiteness. Depth perception may be difficult. Therefore, the pilot must rely on instrument scan for attitude and glide slope control. *It is extremely important to avoid large attitude changes during approaches in blowing snow.*

Visual Cues

Approach lights, runway markings and lights, and contrast are the primary visual cues. At some facilities, touchdown zone and centerline lights may also be available. To be effectively prepared for the transition to visual flight, the pilot must become familiar with the lighting and marking patterns provided at his destination and correlate them with the weather.

Pilot Reaction Time

At 100 feet AGL on a 3 degree glide slope, an aircraft is approximately 1900 feet from the touchdown point. If your aircraft's final approach speed is 130 knots (214 feet/sec), you have about 9 seconds to bring visual cues into the cross-check, ascertain lateral and vertical position, determine a visual flightpath, and establish appropriate corrections. More than likely, 3 to 4 seconds will be spent integrating visual cues before making a necessary control input. By this time, the aircraft will be 600 to 800 feet closer to the GPIP and 40 to 60 feet lower. Therefore, it is absolutely essential that you be prepared to use visual cues properly and with discretion during the final stages of a low visibility approach. You must be positive that the patterns developing during the visual cross-check are related to the runway environment and that your visual perspective for flightpath control is adequate prior to total reliance on the visual information.

Low visibility approaches demand the best of an aviator. It is obvious that we must thoroughly understand this demanding environment and train crews to the peak of proficiency.

Adapted from an article by
MAJ Donald L. Carmack, USAF
in USAF Aerospace Safety

A HARRIER TALE

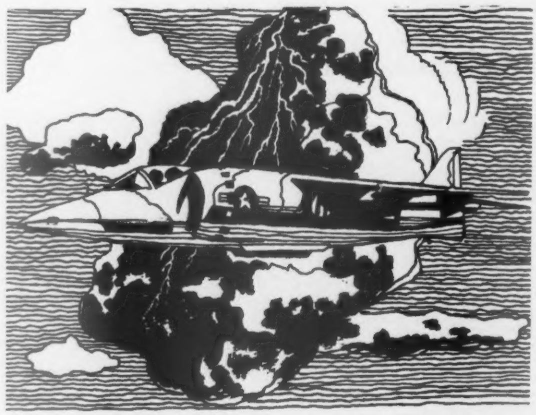
LIME 23, an AV-8A, was cleared for a Nautilus-5 departure to the Nautilus IAF at FL190 for a practice TACAN recovery into the MCAS Beaufort GCA pattern. The takeoff and climb out the 140 degree radial were routine. Proceeding over water toward the 48-mile arc, the pilot noticed his visibility was reduced by haze.

Climbing through 15,000 feet, he went IFR. At FL190, he levelled off and turned to intercept the assigned arc – still solid IFR. Nearing the 110 degree radial, he experienced light to moderate turbulence followed by a bolt of lightning that appeared to strike just forward of the starboard intake.

The pilot felt a sudden loss of thrust and saw his RPM unwind. He closed the throttle, disregarded the HUD (which occulted), oriented himself on basic instruments, and set up a wings-level glide at 260 knots. He put the throttle at idle, got a relight, and requested vectors home.

The pilot alerted his squadron with a call on FM, and a playmate rendezvoused with him for an airborne check. The playmate reported negative damage, but Lime 23 dumped fuel and executed a straight-in, precautionary, fixed-throttle approach.

Postlanding inspection revealed a char mark on the surface of the vertical stabilizer but no structural damage. A high-power calibration run revealed no engine damage, and the *Harrier* was released for flight.



The most probable cause of the flameout was the extreme and sudden adverse pressure gradient across the intake caused by the lightning bolt. No thunderstorms were forecast to be in the area. The pilot saw no buildups, and the controller working Lime 23 had no weather indications on his scope. Another pilot had flown the same route 20 minutes earlier and reported only poor visibility.

MAR-NIHILITY*

By LCDR Rodney N. Whalen
Naval Safety Center

Dateline: 1 July 1984

The history of naval aviation safety is punctuated quite conspicuously by "end of eras." The end of each era has been determined by definition as "that fiscal year during which the MAR (major accident rate) reached the next lower 10 percentile."

The first era of prime importance ended 30 June 1972 when the MAR at last descended not only below unity, but even below the 90 percentile. The final MAR that year was 0.88 major accidents per 10,000 flight hours.

The ending of that era was and still is the subject of many arguments concerning end of eras because the following fiscal year saw the MAR go above 0.90.

Nevertheless, the below-unity MAR was, at that time, a significant achievement, attributable for the most part to a nonscientific, standard-intelligentsial effort by a pitifully few safety-conscious individuals.

Tools used in that era were:

1. Increased emphasis on adherence to NATOPS (the forerunner of our CPPSOPM [computer-programmed, psychic-suppression, operating parameters manual]).
2. Safety standdowns (short periods of pre-aerial soul-searching).
3. Supreme efforts of our Safety Control Unit (Central), called in that day "the dog and pony shows."

The next major breakthrough saw the MAR drop to 0.52 in June 1978. This superhuman effort, for that period, eliminated all material causal factors, attributed to the over-abundance of knowledge accumulated by the astronauts (now called solarnauts) and the space program.

Material factor was eliminated by:

1. The MPFDC (mega-parameter, flight data computer) that could predict exact time of system/component failure, 7.19 flight hours in advance.
2. The HYLEM (hyperspace laser electro-magnetic) scanner, capable of detecting megascopic abnormalities by scanning structural and systems hardware fore and aft, top to bottom, as the aircraft taxied into its contamination-free cocoon.

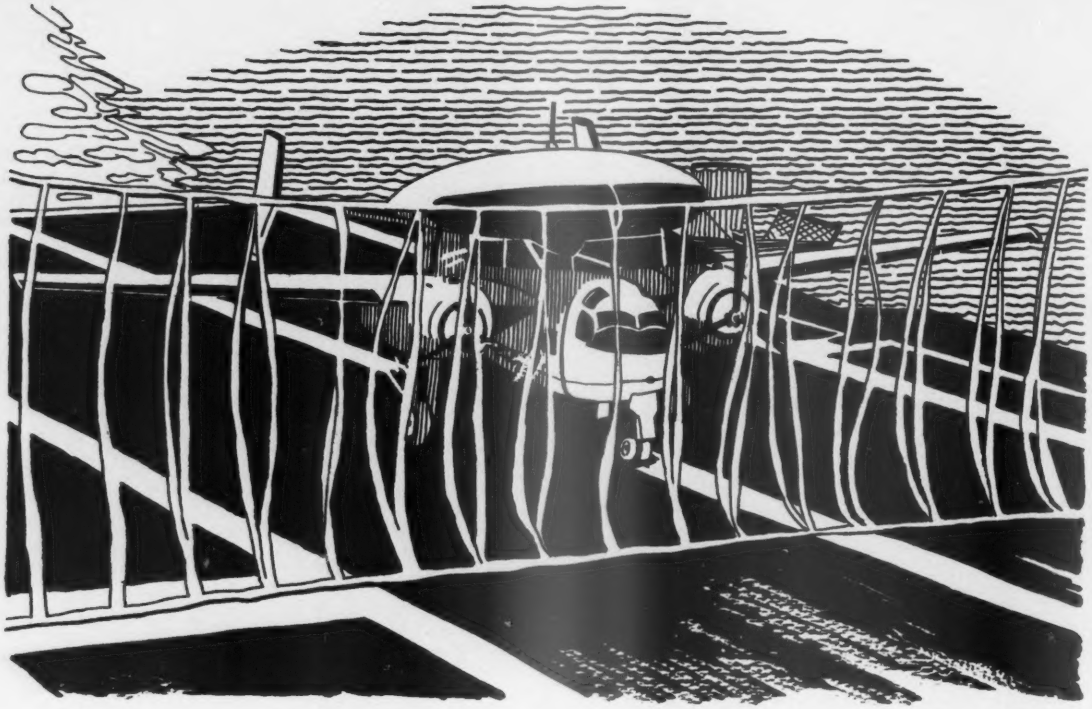
The next era ended two fiscal years later in June 1980 when maintenance personnel factor was almost totally eliminated as a causal factor. Responsible for this breakthrough was development of the Subcranial, Safety-psycho Motivator. This device was merely a psycho-motor that rejected complacent attitudes and restricted musculo-skeletal response to unsafe thought stimuli. The MAR was now down to 0.38.

The end of the current fiscal year saw the MAR drop below the 10 percentile to 0.06. This is attributable to the refinement of the Sub-cranial Safety-psycho Motivator and the breakthrough in successfully programming the pilot to react to combined auto-suggestive/post-hypnotic techniques.

Here, all psychic-suppression operating parameters, using the CCPSOPM, have been programmed into the pilot to cause all human functions throughout the body to reject unsafe thought and action.

Although our safety efforts have been successful beyond all expectations, there will be no rest here at SCU (Central) until the MAR reaches *nihility*. The cause of the remaining 0.06 major accidents is known, and our No. 1 expert in the field is working night and day on the problem. Right, Chaplain?

*** Major Accident Rate – Zero**



SINGLE-ENGINE OK 2 WIRE

AN E-1B was catapulted from the deck of a CVA to serve as strike control for a simulated Alpha strike. After levelling at 5000 feet in normal cruise, the port engine backfired twice. The crew felt a swerve to port.

The pilot placed both mixtures rich and reduced power on the port engine. All engine instruments were normal at this time, and the port nacelle was clean and dry. Power on the port engine was then returned to a cruise power setting.

About 10 minutes later, oil began streaming from the port engine crankcase vent, and the port oil pressure began dropping rapidly.

As the oil pressure approached 40 PSI, the pilot feathered the port engine. At this time, the aircraft was 68 miles from the ship and about 105 miles from the nearest divert base with a fuel state of 3400 lbs.

With max power on the starboard engine, the *Tracer* descended through 3500 feet at 500-800 fpm. Fuel was dumped to 2600 lbs and then to 1800 lbs when the rate of descent could not be halted.

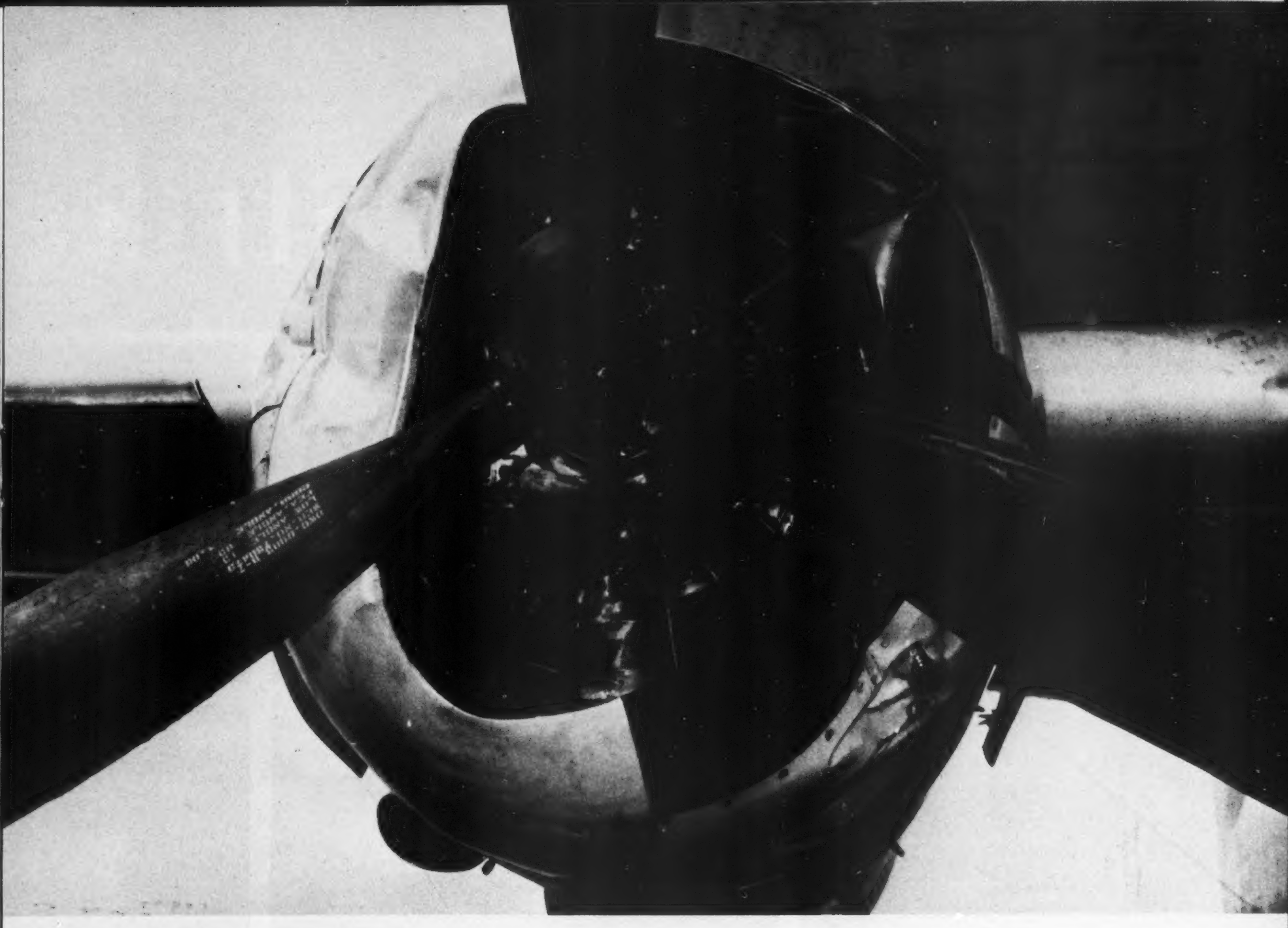
Because the starboard engine had been at maximum power for about 5 minutes, the pilot elected to reduce throttle to prevent possible engine damage. As the aircraft descended through 1800 feet MSL at 400 fpm, he ordered all possible equipment jettisoned. About 500 lbs of equipment was jettisoned, and fuel was dumped to 1400 lbs. The aircraft stabilized at 450 feet MSL with 2700 RPM and 47 inches MAP on the starboard engine.

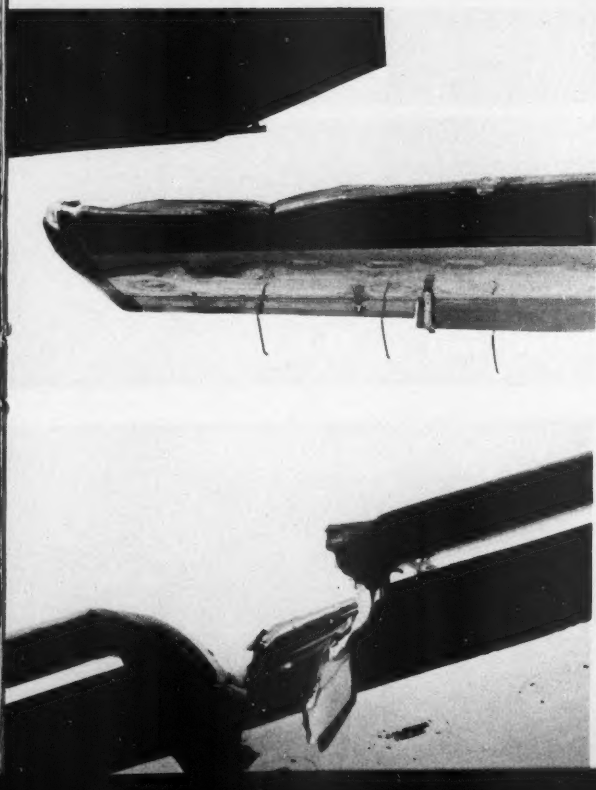
Meanwhile, the aircraft had turned toward the ship and made contact with Pri-fly. The pilot stated he did not desire the barricade. When he was unable to assure Primary that the E-1 could successfully bolter, the air boss ordered the barricade rigged.

The Fudd continued inbound and commenced a straight-in approach from 1 mile at 600 feet MSL. The pilot called the ball with 700 lbs of fuel remaining and flew the single-engine carrier pass to an "OK 2 wire" and barricade engagement. The crewmembers were uninjured, but the aircraft received substantial damage from the barricade engagement (see photos).

The cause of the engine failure was attributed to a component failure within the No. 1 engine.

It was discovered during the investigation that an oil sample for the failed engine was 7 hours overdue. Although the previous oil sample on that engine had not indicated an impending problem, the possibility exists





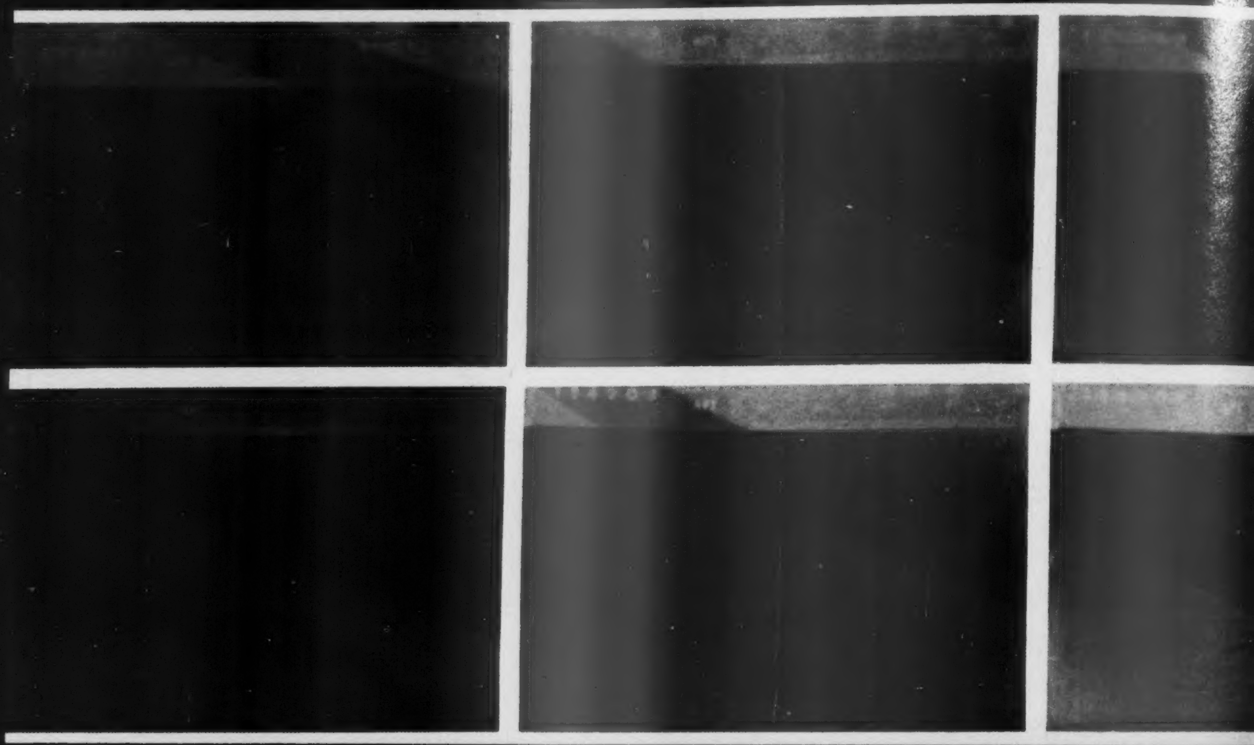
that if a sample had been taken at the required 30 hours, the impending failure might have been detected.

The mishap board noted that the high air temperature and humidity at the time of engine failure may have contributed to the aircraft damage. Such meterological conditions and the long distance to a divert field necessitated a shipboard landing. The uncertainty of a successful bolter, in turn, dictated the use of the barricade.

The mishap board concluded:

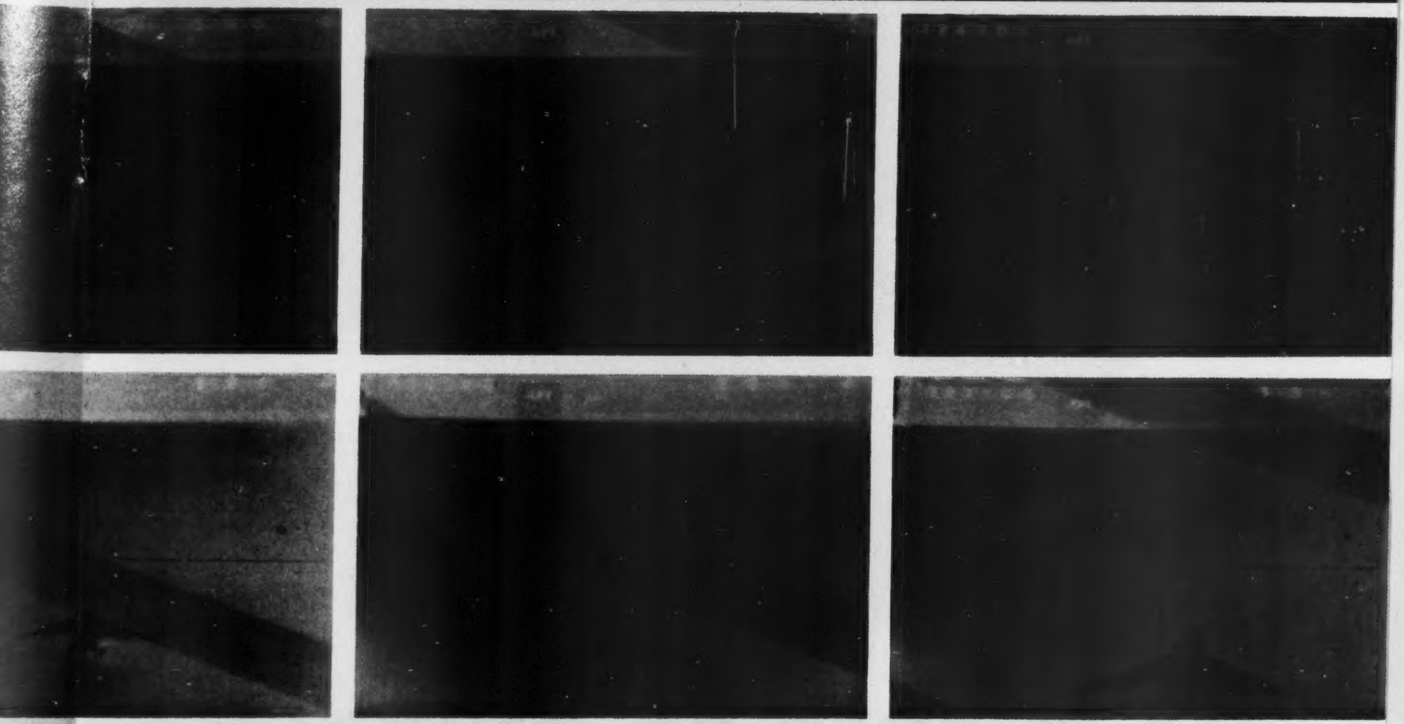
"The board has no specific recommendations that could prevent this type of accident short of an aircraft design change such as weight reduction or a dome jettison system. The board does recommend, however, that a systematic procedure be established to jettison avionics equipment. This procedure should be based upon weight, access, and need, and all equipment should be numbered with reflective tape to indicate sequence of jettison. Additionally, the board recommends that a standardized procedure be established to ensure that oil samples are taken at the proper times."

A Ramp Strik



"Four seconds from impact, the pilot c
when he reduced power and lowered the nos
waveoff point, and while an LSO waveoff w
probably would not have averted the ramp st

e in the Making



committed himself to an inevitable ramp strike
ose. At this point the approach was inside the safe
would have been the most correct procedure, it
strike."

Type Commander's AAR endorsement

Like an old horse heading for the stable, the aviator may surrender good judgment in his desire to get home . . .

Be it ever so humble...

By LTCOL Max Moore
Directorate for Education and Prevention
USAAAVS

OF ALL phases of flight, the homeward-bound portion leads in the number of crew errors. If an aviator is going to overextend himself or his aircraft, if he is ever going to take a foolish chance, it will be while he is trying to get home.

Decisions to go or not to go are a part of every aviator's life. In training, he spends a lot of time learning how to evaluate all factors affecting his flight. With all this training, and as a self-styled professional, he may imagine himself as a cool, analytical machine, weighing factors objectively before making decisions. But if his destination is the place he currently thinks of as home, he is apt to abandon good judgment and professionalism, disregard obvious dangers, and make his decision on the basis of emotion. This urge to return to the nest does not depend upon high-quality living quarters, nor must there be a loved one awaiting him. The mere presence of familiar and personal things – things which remind him of loved ones – makes it his emotional home.

A few years ago, one of the most highly-qualified pilots in the Army, together with his copilot, crew chief, and an aviation medical officer, was killed in an aircraft crash during an apparent attempt to get home on a night VFR flight under marginal weather conditions over

mountainous terrain. This pilot was an instrument examiner and a graduate of the USC safety course. The accident investigation board reported the accident cause as inadvertent flight into instrument conditions leading to the crash on a peak some 20 miles off course. Actually, the most probable cause was the crew's openly expressed impatience to get on home as soon as possible. Home, in this case, was a sandbagged hootch furnished with the typical canvas cot and ammunition box furniture, hardly enough to attract anyone – except the resident. The desire to sleep in familiar surroundings and have the use of personal articles, or perhaps to pick up the mail, apparently were urges too strong to overcome.

The aviation psychologist refers to this desire as "get-home-itis" and recognizes it as a strong motivating factor. The aviator must make a conscious, diligent effort to keep it suppressed. When it is teamed up with another condition known as "end slump" or "end deterioration" (the human tendency to relax near the completion of any job), the aviator finds himself strongly tempted just when he has the least resistance. Controlled experiments of aircrew performance have revealed an almost irresistible tendency to relax when home is in sight, and this leads to the greatest number of crew errors on the final leg of the mission.

In Europe, where aviators are exposed to some of the worst possible flying weather, it is frightening but true that, in the past, many aviators informally recognized two sets of weather minimums: one set for going and another for coming back home. At the smaller airfields, enroute and landing weather was often disregarded or was forecast to suit the needs of the aviator. Weather forecasters often began their briefing with the question, "What do you need to get in there?" It was not uncommon for the pilot to "shop around" between forecasters until one was found who would give the necessary legal weather.

If we look back over our own flying careers, we will find that nearly every poor decision was made on that leg of the trip pointing home. Not only have we disregarded weather, but we also have ignored sick aircraft and radios and seriously low fuel conditions. All these problems we have pushed aside to get on home. Most of us at one time or another have consciously filed and flown IFR through areas of known thunderstorms and moderate icing conditions and have violated minimums, all for the sake of getting home. And those of us who are around to talk about it must have been pretty lucky, for we surely weren't smart.

What can be done to prevent accidents caused by get-home-itis, this overextension of capabilities? First of all, the aviator must be aware that getting home is a temptation capable of overcoming his otherwise good judgment. Secondly, the commander must realize that he has much of the responsibility for avoiding this type of accident and should act accordingly. For example, he can foster a policy that accepts unplanned RONs without comment or at least without prejudice toward the crew. In addition, he can make it SOP for flight crews to carry an RON kit of essentials whenever an unscheduled stop might be possible.

If the aviator realizes that a 180-degree turn and an unscheduled stop are not "against the law," he may contribute to the creation of another old pilot and the longevity of his crew and passengers.

Courtesy U.S. Army *Aviation Digest*

Luck

WEBSTER defines luck as "that which happens to one, seemingly by chance, in the course of events." It can be good or bad. According to this definition, we have no control over it.

Astronaut Alan B. Shepard, Jr., attached a different meaning to this word. Testifying before the House Space Committee, he stated that he had frequently been asked where he got his luck. "We make our own luck," Rear Admiral Shepard told the members of the committee, "by careful attention to detail, duty, design, and qualification tests."

Luck, in the opinion of RADM Shepard, is not a four-leaf clover or a rabbit's foot. It isn't something which happens by chance. It is something one makes happen. If a person does the things he should, and does them well, he can expect good luck.

Bad luck doesn't happen by chance either. It happens because someone has neglected to do his duties as he should have.

This is the type of philosophy that has proved successful for Astronaut Shepard and many others. It can be just as effective for all of us – if we follow it.

National Guard Summary
Courtesy USAAAVS *Weekly Summary*

Write Up, Right On!

"OK for VFR flight only." (Fine, but why?)

"Fuel transfer gage reads low. Next pilot check."

Do you have yellow sheets in your line shack with these or similar entries? If so, you are overlooking an important area in your aviation safety program, one that can put your mishap board to work before you know it.

Take the C-1A pilot who checked the yellow sheets and found that four of the last five pilots griped "Fuel fumes in the cockpit." Each sign-off read "Fuel system checks OK." Because he's grown accustomed to this type of thing, the pilot is not the least bit interested in getting more info. On takeoff, the starboard engine begins to stream fuel. After making an emergency landing, the starboard engine and wheelwell burst into flames. Fortunately, the crew was not injured, and the fire was extinguished posthaste. The mishap board found that the starboard fuel line was improperly aligned causing an undertorqued B-nut to back off.

One step toward eliminating this type of mishap lies in quality assurance and its total implementation. Mention quality assurance to some pilots and you draw responses varying from a blank stare to a mumbled statement like, "It has something to do with maintenance."

Agreed, the quality assurance billets are filled by maintenance personnel, but the real heart of the program lies with the pilot himself. Inclusion of all pilots in your quality assurance program is a must and can be accomplished by the following:

- Indoctrinate pilots as to the importance of describing troubles fully without telling maintenance how to fix the aircraft. Have the Maintenance Officer read examples of good and bad writeups at AOMs.
- Encourage pilots to follow up discrepancy reports by visiting at the workshop level to find out what part actually did fail to function properly.
- Pursue an active pilots' weekly inspection program and ensure qualified technical aid is available during these inspections.
- Review all aircraft systems at frequent intervals in your pilot ground training program to enable each pilot to intelligently report the performance of his bird following a flight.

Although the examples given are not considered to offer the entire key to success in achieving the goal of good yellow sheet discrepancy reporting, they will serve to emphasize the magnitude of the program.

Additional benefits will accrue if some time during the middle phase of a pilot's training cycle he is instructed in the functional check flight requirements for his model aircraft and then scheduled to fly an "up" aircraft on a controlled "check" hop. After this flight, the pilot should turn in a completed postmaintenance check card for review and comment.

The quality assurance program is sound and offers dividends in the form of increased safety and operational efficiency if actively pursued by pilots and maintenance personnel alike.

Give the next pilot of your aircraft a break. Describe factually and completely how the aircraft you just flew performed. By doing so, you will help to ensure proper maintenance and reduce the chances of putting him out on a limb.

By anyone's standards, a good yellow sheet writeup is RIGHT ON. ◄

VP Flight Time

FPO, San Francisco, CA – Reference LT T. C. Browne's "In Defense of the Pilot" in the July '73 issue. Your "fix" concerning crew rest policy as being under the purview of the wing/squadron commander shows little appreciation of the operational chain of command. As an example, COMPATWING TWO policy regarding crew rest is not applicable to squadrons deployed to WestPac for the simple reason that they are "chopped" to an operational commander independent of COMPATWING TWO command and control.

LT Browne has hit the nail on the head. What is required is a revision to OPNAVINST 3710.7G that changes *optional* guidelines for individual flight time maximums to *mandatory* requirements. OPNAV *recommends* 150 hours per month, and COMPATWINGSPACINST 3750.4B *recommends* 130 hours as a monthly maximum for P-3 flight crewmen. The following data is based on actual statistics of a deployed squadron for a 2-month period:

Hrs Exceeded:	No. of Pilots Exceeding:
150 for 1 month	23
150 for 2 consecutive months	11
130 for 1 month	29
130 for 2 consecutive months	24

In sum, published directives concerning maximums for individual flight time are characterized by "non-mandatory" and "qualified" phraseology. In the case of the excesses cited, none of the exceeded maximums were in legal violation of current safety policy directives, but a judgment based on experience would be prone to conclude that flight crew safety was in jeopardy.

As a matter of interest, PATWING TWO's basic policy for crew rest is 2 hours rest for each hour in the air.

CAPT A. J. Carneghi
COMPATWING TWO

• Everyone agrees that risk goes up when aircrews are subjected to excessive flight hours. Yet, as OPNAVINST 3710.7G states, "Precise delineation of aircrew flight time limitations is impractical in view of the varied conditions encountered in flight operations." This rightly leaves the matter to the discretion of responsible operational commanders (whether squadron, wing, or task force) who must weigh the risks against valid operational requirements.

It is difficult to understand how flight hours in excess of those recommended by OPNAV (or the patrol wing commander) can ever be justified during normal peacetime operations. We must note, however, that past WestPac operations have been on a wartime basis. This could have been a factor in the excesses you cite.

At the squadron level is where excessive flying takes place, and this is the logical focal point for relieving the problem. One method is to temper the can-do spirit to fit the realities of the situation. Granted, squadron commanders are limited when it comes to accepting or rejecting an operational commitment. For this reason, they must be forthright and realistic in keeping superiors in the chain of command informed of their capability to operate safely. At the same time, superiors must establish a climate where COs can make representations in the name of safety without fear of censure. Only in this way can we ensure that an adequate evaluation of risk does take place.

Another method by which the hazards of flight crew fatigue can be reduced is the development of a well-defined, rigidly enforced preflight crew rest policy. This policy may be established in squadron/wing instructions or, better yet, in model NATOPS manuals. As a point of interest, the NAVSAFECEN VP analyst has submitted a recommended change to the P-3 NATOPS flight manual providing for delineation of preflight crew rest policy.

The flight's not over until you sign off the yellow sheet. A pilot experienced an airborne emergency and landed safely, only to have his aircraft engulfed in flames after taxiing to the dearming area.

Not NORMAL

A FLIGHT of two A-4E aircraft was scheduled for a mission from an advanced base. Each aircraft was loaded with a 300-gallon centerline fuel tank and eight Mk-82 500-lb bombs. Preflight and lightoff were normal except that the wingman failed to notice that the emergency generator bypass switch was in BYPASS.

After takeoff, climbing through 10,000 feet, wing experienced intermittent radio problems. When the flight switched frequencies, the radios failed completely. The white cockpit lights went out, and the fuel flow indicator began to fluctuate 300 to 1000 pph at military power.

The pilot visually signalled lead that he had lost his radio. As prebriefed, the flight turned toward the ocean to jettison ordnance. After about 90 degrees of turn, the wingman's fuel flow gage shattered explosively, throwing splinters of glass throughout the cockpit, emitting a small amount of smoke into the pressurized cabin. Fortunately, the pilot had his oxygen mask on and his visor down and escaped injury.

The pilot signalled to lead that he wanted to land immediately. Other troubles materialized at this time. The attitude gyro malfunctioned (off flags flickered in and out), and the cockpit began filling with heavy smoke.

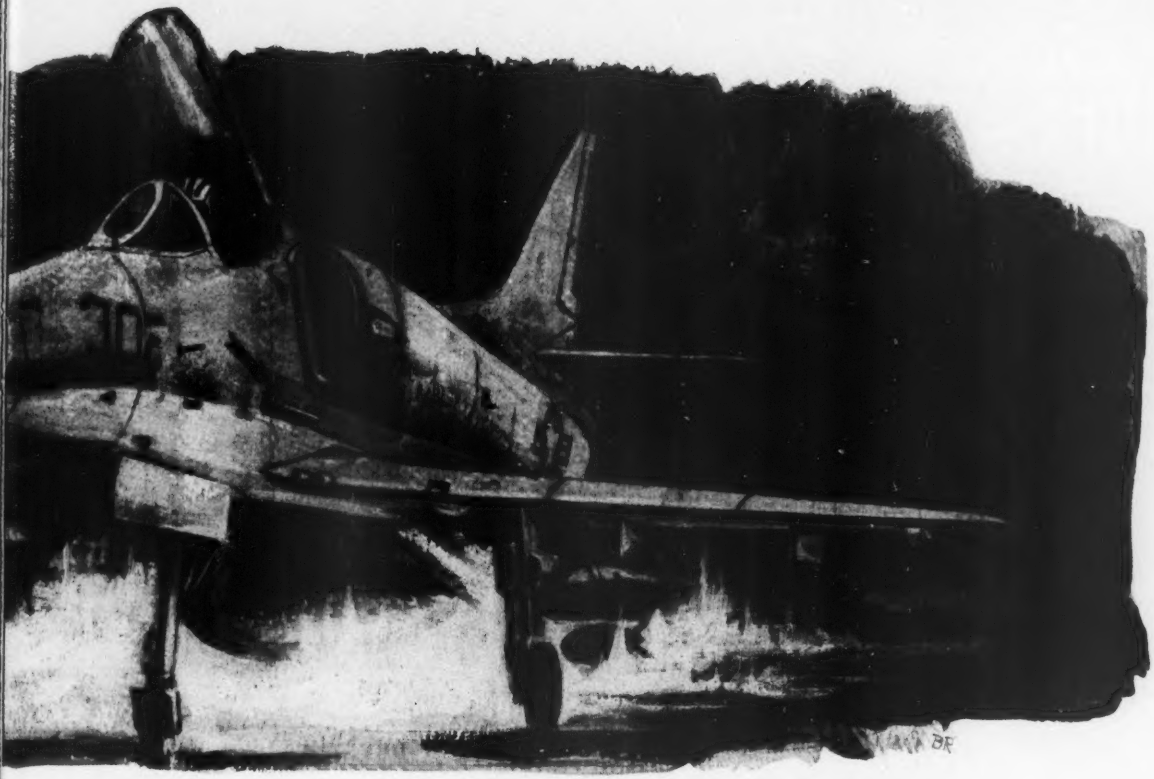
The mishap aircraft assumed the lead and headed for the runway from which he had departed minutes earlier. He began dumping fuel, deployed his emergency generator, and secured all unnecessary electrical equipment in an attempt to regain his radio and reduce the smoke in the cockpit.

The flight leader, now flying wing, declared an emergency with the tower and advised that his playmate was headed straight in to the runway with an unknown emergency. There was a language problem between pilot and indigenous tower personnel, but after much discussion, the aircraft was cleared to land. The leader then advised that the mishap aircraft might have to take the arresting gear and requested that the crash crew be standing by.

At 5 miles, the pilot of the ailing *Skyhawk* lowered his gear handle and simultaneously experienced what he interpreted to be a complete electrical failure. All landing gear indicators read "unsafe." As a precaution, he pulled the emergency landing gear handle, lowered the flap handle, and armed the spoilers. He landed uneventfully at an estimated gross weight of 19,000 to 20,000 lbs. Despite being seriously overweight, he stopped the aircraft in 9000 feet and pulled off the runway.

Although the pilot thought he had secured the fuel dump switch, evidence and response to later questioning indicated that, under the stress of the situation, he had neglected to secure it. The crash crew had been alerted and was in place on the runway at the time of touchdown. While the aircraft was rolling out, however, the crash crew received a radio call to terminate the emergency. This was later determined to be a result of confusion due, again, to the language barrier.

While the crash trucks returned to their original alert station, the pilot taxied partially into the dearming area



and tried to signal for the dearming crew to check his aircraft for hot brakes and install his gear pins. During these few moments, he unknowingly continued to dump fuel. Two other aircraft were in the dearming area some distance away, and both pilots noted the A-4 was dumping fuel. They called on the radio to inform the pilot, but were unsuccessful because of the pilot's inoperative radio.

The other pilots then frantically gave him the NATOPS fuel dumping signal (turning over a cupped hand). The pilot interpreted the signal as "come forward" since he had intentionally stopped his hot brake aircraft a safe distance from the dearming crew. Moments later, the fuel beneath the aircraft ignited and enveloped the plane and pilot (who had just removed his gloves) in flames.

The pilot heard the engine decelerate, unstrapped from the seatpan and shoulder harness, disconnected his oxygen mask, and vaulted over the windscreen and down the left side of the nose. He received burns and lacerations to his unprotected hands on egress. The crash crew which had been prematurely secured eventually extinguished the fire, but not before substantial damage had been done.

Investigators determined that there had been a voltage regulator failure (induced by improper assembly procedures at the overhaul level) which led to the electrical problems. The pilot, however, was cited for his failure to ensure the emergency generator bypass switch was NORMAL prior to takeoff. One endorser to the AAR stated:

"Had the emergency generator bypass switch been NORMAL at takeoff, it is possible that the pilot would have regained his UHF receiver and other d.c. indicators."

If nothing else, stress factors could have been reduced during the approach and landing phase, and the pilot might have been warned by radio that he was dumping fuel.

The pilot's failure to secure the fuel dump switch was of primary importance in the fire that developed. Also of importance was the confusion created by the language barrier which led to the premature securing of the crash crew. Had the crash crew properly escorted the emergency aircraft, the pilot might have been informed that he was still dumping fuel. At least, the crash crew would have been immediately available to combat the fire. ◄

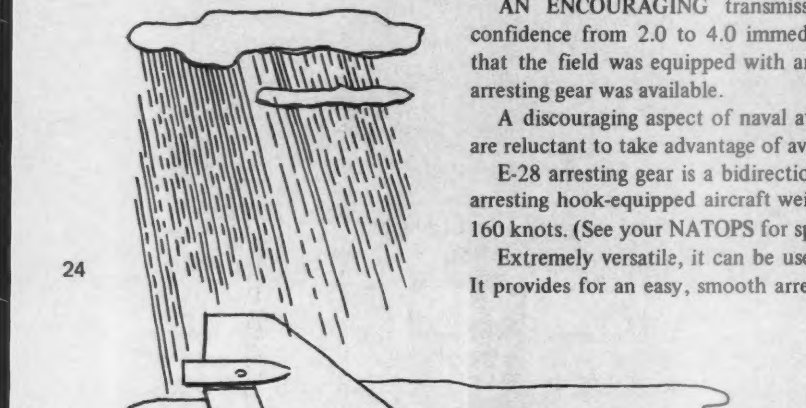
'I'll be taking the E-28'

By LCDR John R. Howard

Approach control: "Zulu Zulu One Three, NAS Gummy is 200 over, ½-mile in light rain. Runway braking action is poor."

Zulu Zulu One Three: "Roger your weather, I'll be taking the E-28 gear."

Approach control: "Zulu Zulu One Three. Roger, gear is rigged and ready."



AN ENCOURAGING transmission such as this must raise an A-7 pilot's confidence from 2.0 to 4.0 immediately. More encouraging, the pilot was aware that the field was equipped with arresting gear. Further, he obviously knew *what* arresting gear was available.

A discouraging aspect of naval aviation is that carrier pilots, for the most part, are reluctant to take advantage of available shore-based arresting gear.

E-28 arresting gear is a bidirectional gear with a runout of 1000 feet capable of arresting hook-equipped aircraft weighing up to 50,000 lbs at engaging speeds up to 160 knots. (See your NATOPS for specific arrestment parameters.)

Extremely versatile, it can be used for short or long field arrestments or aborts. It provides for an easy, smooth arrestment and, with an efficient ground crew, can be reset in less than 5 minutes. So, don't worry about holding up your "wingie" if you decide to take the gear.

In project tests at the Naval Air Test Facility, Lakehurst, the author has made repeated arrestments using E-28 in a variety of test projects with almost every aircraft available in the fleet. They have ranged from lightweight on-center arrestments to heavy-weight, 52,000 pound arrestments, 50 feet off centerline at 155 knots. The arrestments were all without incident or damage to aircraft or arresting gear.

The reluctance of aviators to use the gear might be alleviated through such training as including at least one E-28 arrestment in every RAG flight syllabus.

The E-28 could be the answer to the "ran off runway" accident. It is distressing to read about an aviator who loses control on rollout and runs off the runway after passing two or three sets of usable arresting gear.

Operations Officers: Why don't you schedule some arrestments for your squadron? "Let 'em try it – they'll like it."

notes from your flight surgeon

Are You Current?

ONCE again, a pilot involved in an aircraft accident was found to be overdue in his physiological training requirements. Although this was not a factor in the accident, it points out that some pilots, intentionally or unintentionally, are not keeping up to date in their physiological training.

Requiring that such training be completed prior to every third physical examination, with the issuance of a grounding chit if not completed, might serve to ensure compliance.

Flight surgeon in MOR

Training Put to Use

AS a pilot was adding power to climb from FL220 to FL260 on a postmaintenance inspection flight after an engine change, the A-4's engine failed.

Reporting on the pilot's ejection, parachute descent, and landing, the investigating flight surgeon has high praise for the way he put his survival training to use.

"It is evident," he writes, "that clear thinking, sound judgment, proper training, and well-designed safety equipment together really pay off.

"The pilot reacted to the emergency situation quickly and correctly in all respects. Through clear thinking and excellent training, he was able to control many variables. This greatly reduced the hazards of ejection, parachute descent, and landing."

The pilot was using all the required safety equipment properly before the emergency – helmet, visor, oxygen mask, and gloves. His body was in the optimum position for ejection. He used good judgment during parachute descent by controlling the direction of his drift to keep from landing in a vineyard.

"This is a fine example that through prior training and cool, calm execution of proper procedures," the flight surgeon concludes, "a pilot can often prevent or greatly reduce injury to himself when an emergency arises."

What these students learn in sea survival training at NAS Pensacola may some day save their lives. (Left) They stand in line to jump from a platform aboard an LCM to simulate parachute water landings. (Right) A student splashes down. This is all part of a 5-day course in basic sea survival. The students also experience a simulated parachute drag, then inflate and board their liferafts. Their realistic training ends with a helicopter pickup.

Bunch of Sea Water

ONE problem that I had in the water survival phase was the difficulty in breathing while facing the helo in its hover.

The spray was really fierce, and I swallowed a bunch of sea water until I rotated my helmet visor down over my nose and mouth.

This provided an effective shield against the spray.

Pilot after ejection

Tremendous Difference

"THE DIFFERENCE between talking about an emergency in the readyroom and having an emergency is tremendous," says a pilot who escaped from his aircraft after it went over the side.

"I experienced moments of stark terror, and it was difficult to keep my mind thinking about what to do once I went over the side.

"Most of my actions were automatic rather than the result of a thinking process. I never realized the importance of overlearning immediate action emergencies until I was confronted with one."

Common Omission

A COMMON omission in rescue procedures was repeated in this mishap by both crewmen. They failed to ignite smoke flares to provide wind condition information to the rescue helicopter.

Flight surgeon in MOR

Anymouse

Hypoxia in an H-3

AFTER approximately 1½ hours on an IFR cross-country, at 10,000 MSL in an H-3, I began to feel weak, tense, and generally rotten. I decided that I needed a cigarette to calm my nerves. After a couple of drags, I started feeling very depressed and anxious. After about five drags, I became weak and dizzy, and my hands were trembling.

I tried to put my cigarette out, but with the ashtray in my left hand and the cigarette in my right, I couldn't even hit the ashtray. I concluded that I probably had hypoxia and told the pilot. Then I went to the after-station and lay down with my feet elevated. We descended to 5000 feet. Several minutes later, I felt much better.

I had been drinking the night before, but had stopped exactly 12 hours prior to takeoff. I had 8 hours of sleep and felt fine during the flight brief. However, I am a heavy smoker (2-3 packs a day) and had a slight cold with bronchial congestion at the time.

I think all H-3 type aircraft should be equipped with two oxygen bottles with provisions for microphones and at least one portable oxygen bottle for crewmembers.

Hypoxicmouse

At least you got enough out of that physiology lecture (in between smokes) to know what was wrong and what to do about it.

Now General NATOPS sez "... all occupants aboard naval aircraft will use supplemental oxygen on flights in which the cabin altitude exceeds 10,000 feet ... When minimum enroute altitudes or an ATC clearance requires flight above 10,000 in an unpressurized aircraft, the pilot at the controls shall use oxygen. When oxygen is not available to other occupants, flight between 10,000 and 13,000 feet shall not exceed 3 hours duration ... "

This spells it out quite clearly. However, the altitudes and durations are based on the tolerances of an average aircrewman. Apparently your physical condition, Hypoxicmouse, is not up to "average."

We've been telling it like it is for a long time (about how fliers are affected by weeds and booze), you think maybe we've been puttin' you on?

Have A Belt

A RECENT Weekly Summary (No. 5-73) article "Helo Gunner's

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT, PREVENT AN ACCIDENT

Belts" described how the use of gunner's belts has saved lives. It also described an instance of loss of life by not using the belt.

The latter tragedy occurred a few months ago, and since that time, there has been a great deal of emphasis to ensure that aircrewmen wear the belts. This drive has been successful as far as our regular crewmen are concerned. (Regular – those crewmen who fly frequently.) An incident occurred the other day, however, which leads me to believe the word hasn't reached some of the nonregular crewmen. (Nonregular – those on flight orders who really have to scrape to get their 4 hours a month.)

An aircraft was launched on a routine photo flight and was flown to a target area. The photographer stood up, proceeded to the hatch, and was leaning against the hatch taking pictures when the HAC remembered to doublecheck him for a gunner's belt. The man didn't have one on. He had forgotten to hook up.

There are two glaring errors involved here. First, the photographer should not have been allowed near the hatch without wearing his gunner's belt. (He should have been checked by the regular crewman.) Second, the HAC *must* have failed to emphasize the importance of the belt in his briefing.

Complete briefings are a must, and attention to detail by the crewmen is sometimes a matter of life and death.

Beltedmouse

Inexcusable

OUR mission one morning was a VIP 7, and I was being used as a CMT (crew member trainee). A VIP 7 is routine, but also a trip of necessity.

The preflight was completed, and the HAC signed off with one passenger logged for the flight. We lifted about an hour early to combine training with our mission. After getting airborne, we received instructions to fly to Point X-ray to pick up a message. Upon receipt of the message, we were to return to our unit, deliver the message, and then complete the mission.

We landed at Point X-ray 12-15 minutes later. I unstrapped after touchdown and exited the aircraft, still attached to the ICS to ensure that no one ventured too close to the tail rotor or into the path of the main rotor. I didn't see a messenger, so I expected to be told to go to a nearby building for the message. Instead, I was told that we would be flying over water on our return trip and to issue one of the onboard flotation devices to our single passenger.

I kneeled on the outer edge of the sliding door to reach the flotation gear. As I handed the vest to our passenger, I told him to unstrap to put it on faster and easier. At this time, the pilot took off while the passenger was still putting on his gear, and I was still kneeling on the edge of the doorway trying to expedite things. Both doors were open, and if I hadn't grabbed the side of the doorway, I would have been thrown out. After we leveled off, I strapped in. Then the pilot told us why he had to lift. It seems a code 6 told us to leave the pad so he could land. Without so much as a word or a look to see if we were set to go, the pilot lifted. This caused a near disaster.

Helomouse

We do dumb things when we don't think. Your pilot, by his actions, endangered two lives because he *didn't think. One thing all pilots must remember is that only in an emergency is there ever a reason to lift without completing the checklist or receiving an OK from the crew chief.*

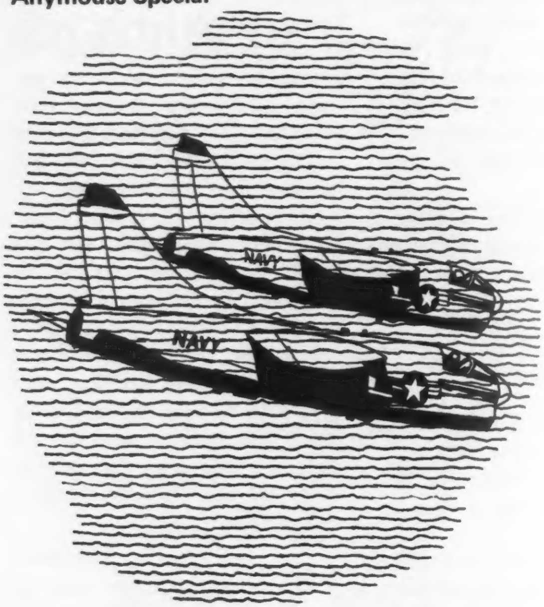
Fearless Fortunate Foolish

YOU *wanna* hear a good one? At a recent change of command, a VIP helicopter approached the tower (with clearance). After touchdown, the pilot left the aircraft wearing summer service uniform. No flight suit. No gloves. No boondockers. I saw stars on his shoulder; does this mean general officers are fireproof?

Nomexmouse

Would you believe he changed after landing? No? Would you believe he previously had on the proper flight gear OVER his uniform? No? Well, perhaps he was fireproof. Regardless, isn't it inwardly rewarding to observe such unadulterated confidence in our flying machines?

Anymouse Special



Looking Back

IT was a typical foggy morning at NAS Coastline when this Weekend Warrior manned his A-7. After an inflight fuel transfer failure of one aircraft, I became leader of a three-plane weapons flight. Things started looking better at the target where the weather was CAVU and the Mk-76s were scoring well. Misfortune struck again when my generator failed and would not reset. I deployed the EPP and advised the flight of my problem.

The flight had been briefed that any aircraft with generator failure would orbit the target at altitude while the flight expended the remainder of their ordnance. The no-generator bird would then fly wing and make a section approach to homefield where the weather was forecast to be above circling minimums. A-7 NATOPS and squadron SOP calls for section approaches and landings in emergency or operational necessity situations. The flight had been briefed that the leader of a section approach in an emergency would wave off only if the runway was clearly visible at circling minimums. If the weather was any worse, the flight would continue to a section landing.

I joined the flight coming off the last strafing run and took position as No. 2. Now, I'm aware of the short operating life of the EPP, but elected to overfly NAAS Desert since it had no A-7 maintenance facilities. Everything was going smoothly until about 10 minutes from homebase when I noticed PC-1 pressure fluctuating around 2500 psi. I advised the flight of this problem, and No. 3 confirmed hydraulic fluid streaming from my port wheelwell. The leader immediately declared an emergency with ATC, and we were cleared for a radar vector to a straight-in section approach to a GCA handoff. The weather was rechecked and was reported to be slightly above circling minimums.

As we reduced airspeed in VFR conditions, my PC-1 was near zero. I used standard NATOPS emergency procedures for PC-1 failure. The master caution light would not stay off due to momentary surges in PC-1 pressure and was rather disconcerting. When the emergency checklist was complete, I advised the leader that I was as ready as I would ever be to enter the dense low clouds.

GCA contact was loud and clear on the takeoff/land mode of the EPP as we went IFR. The aircraft controls felt sloppy with the loss of stabilization in each axis, and my adrenalin level was climbing as I had to fly a very tight wing position just to keep sight of my leader in the thick clouds. Approaching the glide slope from level flight at 1500 feet, the GCA controller suddenly asked, "What are your intentions?"

The leader restated the emergency and advised that we planned to make a section landing. At this point, the GCA controller stopped giving us centerline and glide slope information and instead advised us that he would not approve a section landing and that we were to turn left at one mile from the runway for tower control. Section landings were against regulations, he said, and he was not going to allow any unauthorized landings.

My reply, in a rather high-pitched voice, convinced him we were going to land straight-in on this pass. He then began giving corrections to get us back on glide slope and centerline. We broke out at about 500 feet. I called the runway in sight, and the leader then waved off, disappearing quickly into the fog. The landing and rollout were uneventful as I came out of ISO and cleared the runway to await a tow back to my line.

The A-7 NATOPS procedure for complete electrical failure, alone in IFR conditions, is immediate ejection. If the PC-2 system had also failed, which has happened before, I would have again been in a situation requiring immediate ejection with no alternatives. It seems to me that this particular controller was doing his best to turn a serious situation into a tragic accident. I suggest that GCA and tower controllers be reminded that emergency aircraft have priority to get on the runway ASAP and that radio transmissions are to be kept to an absolute minimum.

Shookmouse

Based upon the incident as you've stated it – the controller was grossly incompetent. He not only exceeded his authority but came close to being a "contributing factor."

During a declared emergency approach, the GCA controller should employ all the expertise at his disposal to assist the pilot, and let the pilot make the decisions relative to landing.

The pilot in command of an aircraft is responsible for the safety of his aircraft and, in an emergency situation, is authorized to deviate from both Federal Aviation Regulations and OPNAV instructions as necessary to ensure the safety of his aircraft and crew. Thus, a GCA controller should offer a pilot all possible assistance in a bonafide emergency. In our view, this does not preclude a controller from questioning a pilot on his intentions . . . or even offering advice concerning emergencies, **BUT,** *he* **must not** *compound the emergency with unfounded or specious discussion or argument.*

How you got into this emergency situation to begin with is another story. First, you overflew a VFR field (NAAS Desert), electing instead to make a section instrument approach to homefield using emergency electrical power. There is no regulation which prohibits this, but in our opinion, you could not have been faulted if you had set down at NAAS Desert, notwithstanding the lack of maintenance facilities. Certainly, it would have been the most **prudent** *thing to do.*

Secondly, you were still above the clouds when you experienced PC-1 failure. This, coupled with the previously experienced electrical failure, added up to an emergency situation. Accordingly, it would have been only good headwork to have landed at any suitable VFR field within reasonable range in preference to making a section instrument approach to homefield.

DOD Flight Information Publications (FLIPs)

THE DMAAC (Defense Mapping Agency Aerospace Center) is responsible for the production of DOD FLIPs (Flight Information Publications). Distribution is made every 28 days or multiple thereof to approximately 25,000 addressees. The distribution of these FLIPs is accomplished from DMAAC, St. Louis AFS, MO, and from commercial contractors located throughout the United States. The total number of FLIPs and addresses involved poses a tremendous distribution task to ensure total FLIP requirements are met on a timely basis for all recipients throughout the Free World.

DMAAC has noted during the last few issues an increasing number of defects concerning late and/or non-receipt of distribution as well as incorrect quantities of FLIPs. These distribution problems have been traced to deficiencies in the commercial transportation/postal systems, faulty packaging makeup by distributing agencies, and inadequate distribution procedures at local operating locations.

DMAAC is taking corrective action to remedy these defects. Such actions are changing the mode of shipment in the case of repetitive delays, increasing the surveillance at both DMAAC and commercial contractors to minimize the chance of inaccurate and/or late distributions, and performing user surveys to evaluate the effectiveness of the entire distribution system.

The ultimate goal is to have all FLIPs in the possession of all recipients one or more days prior to the effective date. In the event that your FLIPs do not arrive as scheduled, you should contact your local FLIP receiving office to check local distribution and to assure that the FLIPs have not arrived at your operating location. All late, non-receipts, shortages and/or overages of FLIPs must be reported to the appropriate DMAAC, Flight Information Office, or to the Director, DMAAC, ATTN: LOT, South Annex, St. Louis AFS, MO 63125. This data will enable DMAAC to take further corrective action to improve the timely receipt of your FLIP requirement.

Letters

Memorizing Emergency Procedures

NAS, Whidbey Island, WA – As an A-6 pilot, I was especially interested in your "Fire in Flight" article in the August 1973 issue of APPROACH. The last recommendation of the aircraft mishap board, to memorize certain NATOPS emergency procedures (in this case, those concerning fire in flight), immediately brought to mind the method used by the Air Force. In the A-6 pocket checklist, no emergency is emphasized over the other, and it is left up to the individual crewmember as to which procedures he should memorize and for which procedures he should use the checklist.

In the T-38 USAF pocket checklist, the Air Force has specified (by printing in boldface type) those procedures which should be memorized. I feel that this is a superior approach to that used in the Navy where some overzealous crews try to memorize *all* emergency procedures, then end up making mistakes in situations requiring immediate action.

LCDR R. J. Palma
VA-145

• Some pocket checklists, the S-2 for example, do have designated memory items for certain emergencies. We agree, it's a real boon and a good way to go.

Clenched Fist

HS-1 SAR (Wet) Aircrewman Course – In response to your request for an appropriate hand signal for a jammed hoist, we suggest the following:

Clenched fist over clenched fist, thumbs down.

This was previously submitted at the NWP-42 conference in March 1973, and it was recommended that it be added to Hand Signals, Chapter 9, para 943, of NWP-42.

HS-1 SAR course is presently teaching this hand signal even though nothing official has been promulgated since the NWP-42 conference. We suggest this hand signal be brought to the attention of all helicopter model managers.

Atlantic Fleet SAR Instructors

• A review of NWP-42 is being conducted now. Your proposed hand signal for a jammed hoist must remain just that, *proposed*, until approved as a standard signal by higher authority.

Label It

FPO, New York – The P-3C has a flight station equipped with many complex flight systems, communication systems, etc. There are well over 100 electrical switches and gages in the cockpit.

In the event of electrical system malfunction, the pilot has to quickly assess the situation and determine the proper course of action (as prescribed in NATOPS). To do this, he must know how each system aboard the aircraft directly affects safety of flight and mission capability. Therefore, all these systems and their electrical power sources must be committed to memory.

There are 4 electrical generators and 14 distribution buses. Consider an example to illustrate the problem of committing the aircraft's electrical system to memory. Suppose you are the pilot of a P-3 returning to Homebase at night after a 10-hour mission. The weather is marginal – 400 feet overcast, gusty winds, thunderstorms in the area, and moderate turbulence. You are 25 miles out at 2500 feet AGL, under radar control, and expecting handoff to GCA any moment. All of a sudden, the cockpit lights dim, and you realize you've lost one of the buses.

As the pilot of this airplane bouncing around at night, at a low altitude, in bad weather, you must determine exactly what has happened, what instruments and radios you do and don't have, and what you should do to achieve a safe landing. Your memory could easily be faulty after a fatiguing 10-hour flight.

Solution. There *is* an easy way to identify power sources and flight instruments quickly. I suggest labeling the electrical power source on all gages, switches, and radios in the flight station (without interfering with their functions, of course). Small labels either on the face of the item or adjacent to it could be used. The label could be coded or abbreviated. For example:

F – Flight essential AC
A – Main AC bus A
B – Main AC bus B
M – Monitorable essential AC
S – Start essential AC
FD – Flight essential DC
D – Main DC
MD – Monitorable essential DC
SD – Start DC
U – Aux power unit
G – Ground operating bus

The labels could be "day glow" stick on, painted, or stamped. I'd suggest about a 3/8-inch character size. These characters could be easily correlated to an appropriate bus as a memory aid.

Labeling these items can't hurt anything, and aviation safety just *may* be enhanced.

LTJG H. M. Acosta
VP-16

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request.

Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, Va. 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

Know Your Procedures

NAS WestPac – As a junior aviator stationed at a WestPac air station for the past year and a half, it is my privilege to stand the operations duty officer watch once a month. Since there is usually some slack time, I use it to review current flight publications: General NATOPS, FLIP Planning, Airman's Information Manual, FARs, etc. I have noticed a disregard and, in some cases, a lack of knowledge by pilots of rules and procedures contained in these pubs.

Examples:

A senior transport aircraft commander not filing for an alternate with weather at destination below the 3000/3 minima required by OPNAVINST 3710.7G.

A RIO (where is the pilot?) filing for a training area on the other side of an ADIZ. He lists a lost comm field near the training area, but fails to get a weather forecast for the field (hope it's a VFR day).

Another senior transport aircraft commander wants to know why he must show ETAs to FIR boundaries on his flight plan.

And last but not least, I have never been berated so much for any one item as I have for making the pilot in command sign his flight plan.

Now, I know the ICAO Flight Plan (DD 1801) says, "Pilot in Command or Designated Representative," but OPNAVINST 3710.7G, paragraph 328, says "... the pilot in command/flight leader *shall* sign the flight plan ..." Remember, paragraph 130 states: "shall" means procedure is mandatory.

Paragraph 335 of the same instruction further states that it is the responsibility of the approving authority to ensure, among other things, that the pilot in command has signed the flight plan. This violation is very common in the transport community.

Suggestions:

(1) Review sessions, at squadron level, to go over General NATOPS, FLIP Planning, etc. Remember, there are two sets of rules and procedures in FLIP Planning – Section II and Section III. Many other pilots stationed here said they had received no briefing on international rules and procedures. Most of their knowledge came from on-the-job training.

(2) The present CNAP Instrument Exam, used here in WestPac, is fine for the States, but it doesn't cover most items applicable to overseas areas. My own unit has made up an ICAO instrument test. Perhaps this could be done on a wider scale.

Enough said.

LTJG D. K. Miskill, Jr.
Navy Air Support Unit

• The need to study and know procedures is a message we continue to push. Unfortunately, the need is not always obvious to all. Your letter is, therefore, most welcome because it indicates that a thorough knowledge of procedures and regulations is not only practical, but necessary.

URT-33 Antenna

NAS North Island – A URT-33 survival beacon is included in the LR-1 liferaft equipment in each seatpan of our S-2E aircraft. The URT-33s are received from Supply equipped with a flexible antenna.

According to the manufacturer's instruction booklet and the beacon's printed instructions, the survivor in the water or on land should remove the antenna for effective use of the radio. Since the flexible antenna is solely for transmission during descent after ejection, it serves no purpose in the S-2 type aircraft.

Removal of the flexible antenna would be, at best, difficult for an injured survivor, and this step might easily be omitted by an aircrewman suffering post-egress shock.

This problem could be eliminated immediately and economically by authorizing the organizational or intermediate level paraloft to disconnect and store the flexible antenna on receipt of an RFI URT-33 and replace it should the unit be returned for repair or reissue.

LT Steven L. Krasik
VS-29

• Your proposal sounds logical on first reading, but if a survivor is incapable of removing the flexible antenna, he may also be incapable of extending the telescopic antenna. It is considered better to have a flexible antenna that gives a reduced or distorted signal than to run the risk of having no antenna at all.

In addition, replacing the flexible antenna on reissue of the beacon may not be as easy as it sounds. Items of this nature are frequently misplaced or lost; then an idea that appeared economical in the first instance suddenly becomes a source of increased expenditure.

Helmet Save

USS FORRESTAL – The Anymouse adventure titled "Helmet Save" in the August issue may have had a happy ending for Hardheaded Mouse, but the restriction to sideways visibility and loss of hearing due to a tight-fitting helmet has resulted in many near misses.

On numerous occasions, I have had to come up on the Mickey Mouse or 5MC to stop an aircraft move on the flight deck to prevent collisions between helmeted strollers and aircraft. There have also been many times during a "man 'em" evolution when maintenance turns were being conducted, and a hardhatted mouse tried to stroll behind a tailpipe. (A good way to make crispy critters.)

I think Hardheaded Mouse made out, but I sure wouldn't encourage making hardhats a must while manning-up.

Boss Mouse

Vol. 19 **approach** No. 6

RADM W. S. Nelson
Commander, Naval Safety Center
Publisher

Our product is safety, our process is education and our profit is measured in the preservation of lives and equipment and increased mission readiness.

Contents

Departments

Credits

On the cover, R. G. Smith previews the Blue Angels' new aerial demo aircraft, the "super foxtrot" model of the Douglas A-4 *Skyhawk* series. Outside back cover photo: LCDR Ronald Maratea.

NavAir 00-75-510

Purposes and policies: APPROACH, published monthly by the Naval Safety Center, presents the most accurate information currently available on the subject of aviation accident prevention. Contents should not be considered as regulations, orders, or directives and may not be construed as incriminating under Art. 31, UCMJ.

Photos: Official Navy or as credited. Non-naval activities are requested to contact NAVSAFECEN prior to reprinting APPROACH material.

Correspondence: Contributions are welcome. The right to make editorial changes to improve the material without altering the intended meaning is reserved. Reference to commercial products does not imply Navy endorsement. Views of guest-written articles are not necessarily those of NAVSAFECEN.

Distribution: Requests for distribution changes should be directed to NAVSAFECEN, NAS, Norfolk, Va. 23511. Phone: Area Code 804, 444-1321, Att: Safety Publications Dept., IF YOU ARE A PAID SUBSCRIBER, address all renewals and address changes to Division of Public Documents, Washington, D. C. 20402.

Subscriptions: Single copy $1.00; 1-year subscriptions $11.70; $2.95 additional annually for foreign mailing.

Printing: Issuance of this periodical approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Library of Congress Catalog No. 57 60020.

BRAVO ZULU

CDR L. P. (Ski) Kaine

CDR Kaine of Coronado, California, former Commanding Officer of VF-301, and a Captain with Pacific Southwest Airlines, recently launched from Miramar in an F-8 *Crusader* to engage in ACM with Fleet F-4 *Phantom* pilots off San Diego.

During the first engagement, CDR Kaine made a climbing left turn and noted, as the airspeed diminished, that his *Crusader* failed to respond to continued left turn control inputs. CDR Kaine regained control by pushing over in a zero-G maneuver and increasing airspeed.

He determined that both spoiler and aileron on the starboard wing were stuck full up. With full left stick, left rudder, and appropriate trim, level flight was achieved at 300 knots in the clean configuration. Fuel was dumped to 2500 lbs, and the aircraft dirtied up at altitude to test landing controllability. The approach airspeed had to be no less than 180 knots – approximately 50 knots faster than normal landing speed.

CDR Kaine elected to return to Miramar dirty and made a successful straight-in approach to an arrested landing.

Subsequent inspection of the aircraft revealed that the abnormal control configuration resulted from a fractured aileron load limiting connecting link assembly.

CDR Kaine responded to a critical emergency situation in a highly professional manner, thereby preventing possible injury to himself and saving a valuable aircraft. He is commended for a job well done!

Have a ball, but get back safely.